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SOME ZOQUEAN PHONEMIC AND MORPHOPHONEMIC CORRESPONDENCES

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0. The Zoquean (or Zoque-Mixe) family of Mexico includes as its chief members Zoque, Mixe, Popoluca of Veracruz, and Tapachulteca. The relationship of these to each other is superficially apparent but has never been systematically stated in terms of the comparative method. This paper is a preliminary statement of some of the more important and clearer phonemic and morphophonemic correspondences.[1]

[1] Materials shown in this paper are from each of the languages and dialects named, with a greater or less quantity of material of my own collection on each of the Zoque dialects treated. Mixe and Popoluca data are from unpublished materials of Walter S. Miller and Ben Elson respectively; part of the Popoluca data was also collected by me but has been checked by Elson. The phoneme list for Popoluca has been checked by Elson; see also his Sierra Popoluca Syllable Structure, IJAL 13.13–17 (1947). The data on Tapachulteca are fragmentary; they are from two short articles by González and Sapper, both dated 1927: Pablo González Casanova, El Tapachulteca no. 2, sin relación conocida, in Revista Mexicana de Estudios Históricos 1.18–26; Carlos Sapper, La Lengua Tapachulteca, in El México Antiguo 2.259–68. Part of the preparation of this paper was done under H. V. Velten at Indiana University in 1946 while I was in residence as an All-University Fellow. The maps were drawn by Katherine Voigtlander.

The languages and dialects represented are divided into the general areas shown schematically on Map I. Abbreviations for the areas are as follows:

CZ....Central Zoque (Copainalá)
NZ....North Zoque (Magdalena)
NeZ...Northeast Zoque (subdivided into dialects of Tapalapa, Ocotepec, Pantepec, San Bartolomé, Chapultenango)
SZ....South Zoque (Tuxtla Gutiérrez and Ocozocuautla dialects)
WZ....West Zoque (San Miguel Chimalapa)
T.....Tapachulteca (Tapachula; extinct or nearly so)
SP....Sierra Popoluca (Soteapan)
M.....Mixe (dialect of Camotlán unless otherwise stated)

MAP I

Note that five Zoque dialect areas are set up in this grouping, and that of these, NZ and SZ each include more than one specific dialect. The most extensive materials available for Zoque are in the CZ dialect.

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Popoluca and Mixe are each represented in this paper by only one of the several dialects that they include. Materials on the extinct or near-extinct Tapachulteca are scanty and not too reliable, but are included where possible.

1. Phonemic correspondences.

The following list shows the consonants of four of the Zoque dialects, of Popoluca, and of Mixe (the lists for NeZ, SZ, WZ, and M are still tentative; the Spanish transcription used for the materials published on Tapachulteca render a satisfactory phonemic analysis difficult to determine for that language, but it appears to follow the same general pattern):

CZ	p	t	c	t^y	č	k	(b	d	d^y	ǰ	g)	s	š	–	–	h	ʔ	m	n	ñ	ŋ	w	y
NeZ (Ocpc.)	p	t	c	t^y	č	k	b	d	*d^y*	(ǰ	g)	s	š	–	–	h	ʔ	m	n	ñ	ŋ	w	y
SZ (Tux.)	p	t	c	*t^y*	č	k	*b*	*d*	–	–	*g*	s	š	–	–	h	–	m	n	ñ	ŋ	w	y
WZ	p	t	c	*t^y*	č	k	–	–	–	–	–	ṣ	*š*	–	–	h	ʔ	m	n	ñ	ŋ	w	y
SP	p	t	c	t^y	č	k	b	d	d^y	–	g	s	š	–	–	h	ʔ	m	n	ñ	ŋ	w	y
M	p	t	c	*t^y*	č	k	*b*	*d*	–	–	*g*	ṣ	š	ʐ	ž	h	ʔ	m	n	*ñ*	*ŋ*	w	y
												ʐ												

In the above list, groups of phonemes enclosed in parentheses are considered phonemic solely due to contrasts arising with Spanish loans.[2] Symbols in italics in the list indicate sounds whose phonemicity is doubtful at the present stage of the investigation; for example, t^y, š, ñ should possibly be interpreted in certain of the dialects as clusters rather than unit phonemes, and certain voiced sounds in SZ and M may be allophonic rather than phonemic. In addition to the consonants listed, the dialects have l, r, r· (mostly in Spanish loans; but l appears in a number of non-Spanish words, and r is derived from intervocalic *t in a number of words in the Chapultenango dialect of NeZ).

We set up the following tentatively as a minimum list of segmental phonemes for Primitive Zoquean (PZoq):

Stops	p	t		c	k	k^w	ʔ
Spirants		s					h
Nasals	m	n		ŋ			
Semivowels	w	y					W
Vowels		i	ʌ		u		
		e			o		
		ä			a		

The phoneme *k^w is set up, rather tenuously, on the basis of a single correspondence in which Zoque and Popoluca kw corresponds to Tapachulteca and Mixe p. The forms of this are shown in example 31 below.

An alveopalatal series t^y, č, š, ñ is phonemic in most (perhaps all) of the dialects. But these phonemes in most of their occurrences arise from an alveolar phoneme palatalized by a contiguous y or i (demonstrable in many cases on a synchronic level). We therefore do not set up these as PZoq phonemes, although they may have become phonemic at a comparatively early date in at least some of the dialects.

For discussion of *W, see **2.5** below.

The vowel *ä is set up to account for correspondences in which the Tapachulteca form is transcribed in the materials with e and the other dialects have a. Example: PZoq *kämä(k): CZ, NZ, NeZ (Tapal., Ocpc., Ppc.), SZ (Tux.), SP kama; M kam; T kémek *cornfield* (the Mixe form means *land*). See also example 8 below.

Numerous other problems arise with vowel correspondences, which are not treated here;

[2] In my Phonemic Acculturation in Zoque, IJAL 12.92–95 (1946), I have shown that for CZ there are two possible phonemic statements, depending on whether Spanish loans are or are not treated as part of the Zoque system. Either statement has validity and is useful for certain purposes. In the present paper I use the phonemic transcription of CZ which includes Spanish loans in the system.

most of these must await further investigation.

Vowel length is phonemic today in some of the dialects; unfortunately not all our data is accurately transcribed as to length, and therefore no attempt is made to reconstruct length in this paper. Length is usually not written in the examples either (except for SP examples, where the data is accurate).

1.1. Correspondences with stops *p, *t, *c, *k are here traced in word initial and intervocalic positions. In word final position, stops in PZoq are usually preceded by h; these are treated in **2.3** below. The correspondences of stops after nasals are treated in **2.1.**

1.1.1. PZoq stops in word initial position remain unchanged in all the dialects, except that *c- > č- before *i in Popoluca, and before *i, *ä in Tapachulteca (see **2.4**). Examples follow.

*p- (word initial):

(1) PZoq *pahk: CZ, NZ, SZ (Tux.), WZ, SP pak; NeZ (Tapal., Ocpc., Ppc., Chpgo.), M pahk *bone.*

(2) PZoq *pʌn: CZ, NZ, SZ (Tux.), WZ, M pʌn; NeZ (all) pʌt *man*; cf. SP pʌ·šiñ *man* (the M form means *who;* but cf. M pʌtʸ *boy, man*).

*t- (word initial):

(3) PZoq *tʌhk: CZ, NZ, SZ (both), SP tʌk; NeZ (all), M tʌhk; T tok *house.*

(4) PZoq *tuŋ: CZ, NZ, SZ (Tux.), WZ SP tuŋ; NeZ (all) tuk; M tuʔu *road.*

*c- (word initial):

(5) PZoq *cahin (?): CZ, NZ, SZ (Tux.) can; WZ cahin; NeZ (Tapal., Ocpc., SBtolo., Chpgo.) cat; SP ca·ñ; M caʔañ *snake.*

(6) PZoq *cuhk: CZ, SZ (Tux.), SP, T, M cuk; NeZ (Tapal., Ocpc.) cuhk *mouse.*

(7) Before *i: PZoq *cin: CZ, NZ, SZ (Tux.), WZ, M cin; NeZ (Ocpc., SBtolo., Chpgo.) cit; T čiŋ *pine*; SP čiŋkuy *pine tree.*

(8) Before *ä: PZoq *cäʔ: CZ, NZ, NeZ (SBtolo., Chpgo.), SZ (both), WZ, SP caʔ; M ca; T čé *stone.*

*k- (word initial):

(9) PZoq *kuy: CZ, NZ, NeZ (Tapal., Ocpc., SBtolo., Chpgo.), SZ (both), WZ, SP, T kuy *tree*; M kuyhyam *wood ashes.*

(10) PZoq *kʌʔ: CZ, NZ, NeZ (Ocpc., Ppc., SBtolo., Chpgo.), SZ (Tux.), SP kʌʔ; M kʌʔʌ *hand*; WZ kʌcuš *finger* (?) (cf. SP kʌ·cus *finger*).

(11) One M form shows *k- > c-, if the forms actually are cognate: PZoq *kihp-: CZ kihp- *to fight*, kipkuy *a fight*; NeZ (Tapal.) kihpkuy; M cipʼ *a fight.*

1.1.2. PZoq stops in intervocalic position are voiceless in CZ, NZ, SZ, WZ, T. In SP, M there is a tendency toward intervocalic voicing of stops, with at least traces of the operation of 'Verner's law' in M. In NeZ, the stops *-p-, *-t- become -b-, -d- (-r- in Chapultenango) in most words; there is a residue of apparent exceptions which may be due to dialect borrowing or other factors.

We now show each of the PZoq stops in intervocalic position, stating the specific correspondences for each.

*-p- (intervocalic):

PZoq *-p- >- p- in CZ, NZ, SZ, WZ, T, M; > -b- in NeZ; > -p- ~ -b- in SP (the alternation in SP is unexplained).

(12) PZoq *kopahk: CZ, NZ, SZ (Tux.), WZ kopak; M kupahk; NeZ (Tapal., Ocpc., SBtolo.) kobahk; NeZ (Chpgo.) kobak; SP ko·bak *head* (the M form means *skull*). Note here an unexplained correspondence of u in Mixe to o in the other dialects. Mixe of Alotepec is kobahk, in which the vowel remains o but PZoq *-p- > -b-.

(13) PZoq *popo: CZ, NZ, SZ (Tux.), WZ popo; NeZ (Tapal., Ocpc., Ppc., Chpgo.) pobo; SP po·po *white.* In the M form poʔop *white* the p is no longer intervocalic.

(14) PZoq *ʔapah(?): CZ ʔapah *grand-*

parent; NZ ʔapuhata *maternal grandfather*; T apu; M ʔap *grandparent*; SP ʔa·pa *mother*.

(15) PZoq *ʔapiht: CZ, NZ ʔapit; NeZ (Tapal., Ppc.) ʔabiht; NeZ (Ocpc., Chpgo.) ʔabit; SP ʔa·pitʸ *thorn*. In the M form ʔeptʸ *thorn* the p is no longer intervocalic.

(16) PZoq *hʌpʌ(ʔ): CZ, NZ, SZ (Tux.) hʌpʌ; WZ hʌp-; NeZ (Ocpc., Chpgo.) hʌbʌ; NeZ (Ppc.) hʌmbʌ[3] *chin*. In the M form hʌhp *nose* and the SP form hʌp *mouth*, the p is no longer intervocalic (but cf. SP -aŋhʌbʌhʌbʌku?m- *to talk back*). The M form hʌhp would suggest a possible PZoq *hʌhpʌ.

*-t- (intervocalic):

PZoq *-t- > -t- in CZ, NZ, SZ, WZ, T; > -d- (∼ -t-) in NeZ (Tapal., Ocpc., Ppc.); > -r- (∼ -t-) in NeZ (Chpgo.); > -tˀ- (∼ -tʸ- before i) in SP; the data examined is lacking in M forms with reflexes of *-t-. The NeZ forms with -t- are comparatively rare and may tentatively be considered as due to dialect borrowing.

(17) PZoq *witʌm (ʔ): CZ, NZ, SZ (Tux.), WZ witʌm; NeZ (Tapal., Ocpc.) widʌm; NeZ (Ppc.) widʌp; NeZ (Chpgo.) wirʌŋ *eye*.

(18) PZoq *toto: CZ, NZ, SZ (both), WZ toto; NeZ (Tapal., Ocpc., Ppc.) todo; NeZ (Chpgo.) toto; SP to·to *paper*. Note the Chapultenango form with -t-.

(19) PZoq *pata: CZ, NZ, SZ (both) pata; NeZ (Tapal., Ocpc., Ppc.) pada; NeZ (Chpgo.) para; SP pa·ta *straw mat* (*petate*).

(20) PZoq *yati: CZ, NZ, SZ (Tux.) yati; NeZ (Ocpc., Ppc.) yadi; NeZ (Chpgo.) yari; SP ya·tʸi *anona*.

(21) PZoq *hata (ʔ): NZ, SZ (Tux.) hata; WZ hatoŋ; T até; NeZ (Ppc.) handa;[4] NeZ (Chpgo.) hara; SP ha·tuŋ *father*.

*-c- (intervocalic):

PZoq *-c- > -c- in CZ, NZ, SZ, WZ, NeZ; > -c- (∼ -č- before i) in SP, T; > -c- ∼ -ʒ- in M (the Mixe alternation is unexplained).

(22) PZoq *kocʌhk: CZ, NZ, SZ (Tux.), WZ kocʌk; NeZ (Tapal., Ocpc., Ppc.) kocʌhk; SP ko·cʌk *mountain*.

(23) PZoq *täcʌhk: CZ, NZ, SZ (Tux.), WZ tacʌk; NeZ (Tapal., Ocpc., Ppc.) tacʌhk; SP ta·cʌk; T téčik; M tack *outer ear* (note that in the M form, c is no longer intervocalic; but cf. Ixcu. dialect of Mixe which is tacak *outer ear*).

(24) PZoq *tʌcʌʔŋ: CZ, NeZ (Tapal., Ocpc.) tʌcʌʔŋ; WZ tʌcʌʔ; T dóco *iguana*.

(25) PZoq *maca(h): CZ, NZ, SZ (Tux.), NeZ (Tapal., Ppc.) maca; NeZ (Ocpc.) macah; SP ma·ca; M mʌʒaʔa *star*.

(26) PZoq *ʔaci: CZ, NZ, NeZ (Tapal., Ocpc.) ʔaci; NeZ (Ppc.) ʔanci [ʔandzi];[5] SP ʔa·či; M ʔahč *older brother*. Cf. NZ ʔačʌ ∼ ʔačpʌ *old man*.

*-k- (intervocalic):

PZoq *-k- > -k- in CZ, NZ, SZ, WZ, NeZ, T; > -k- ∼ -g- in SP, M (ʔ) (the alternation is unexplained).

(27) PZoq *hoko: CZ, SZ (Tux.), NeZ (Ocpc.) hoko; SP ho·ko; M hok *smoke*.

(28) PZoq *cokoy: CZ, NZ, SZ (Tux.), NeZ (Tapal., Ocpc., Ppc.) cokoy *heart*; SP co·goy *liver*.

(29) PZoq *naka: CZ, NZ, SZ (Tux.), WZ, NeZ (Ocpc.) naka; NeZ (Ppc.) naŋga;[6] SP na·ka *skin* (cf. M niʔʌk *skin*).

[3] In an earlier version of this paper, read at the meeting of the Linguistic Society of America in Chicago, 1946, I set up a PZoq phoneme of vowel nasalization to take care of correspondences where NZ and the Pantepec dialect of NeZ had a nasal preceding a stop that is intervocalic in the other dialects. Subsequent field work in NZ has revealed that in that dialect the nasal is not part of the stem morpheme at all, but is a 1st or 2nd person pronominal infix! I have not had opportunity to re-check the Pantepec materials, but suspect that the nasal is the pronominal infix there also. Pantepec materials are therefore still cited with the inserted nasal where it appears in my data, but the nasal is ignored in setting up correspondences of intervocalic stops.

[4] See fn. 3.

[5] See fn. 3.

[6] See fn. 3.

(30) PZoq *wakas [but since this is a Spanish loan, there can actually have been no historical PZoq form except the form as first borrowed; we merely set up the formula]: CZ, NZ, SZ (both), WZ wakas; T wakaṣ (?) *cow* (cf. M wah *cow*; but this may be cognate with CZ wa?, SP wa·ŋ *horn*).

*-kʷ- (intervocalic):

PZoq *-kʷ- > -kw- in Zoque dialects and SP; > -p- in T and possibly M. This correspondence is here set up, but on the basis of the single example which follows:

(31) PZoq *kähkʷe-: CZ kakwe; NeZ (Tapal., Ocpc.) kahkwe; SP kakwi; T kepéŋ; M ka?py *scorpion*.

1.2. Correspondences with spirants *s, *h are here traced in word initial position only; correspondences in other positions have not been sufficiently investigated to make an adequate statement.

*s- (word initial):

PZoq *s- > s- in CZ, NZ, NeZ, SZ; > ṣ- in WZ, M; > s- ~ š- in SP (š- before i and in certain other forms). No data has been correlated for T.

(32) PZoq *sʌhk: CZ, NZ, SZ (both) sʌk; NeZ (all) sʌhk; WZ ṣʌk; M ṣʌhk; SP sʌk *beans*.

(33) PZoq *sis: CZ, NZ, NeZ (Tapal., Ocpc., Ppc.), SZ (Tux.) sis; WZ ṣiṣ; M ṣiš *meat*; SP šiš *cow*.

(34) PZoq *soki: CZ, NeZ (Chpgo.) soki; SP šo·ki *snail*. (The presence of š in SP is problematic.)

*h- (word initial):

PZoq *h- > h- in all Zoque dialects and in SP and T. In M it also corresponds to h-, but one form has p- (if indeed it is cognate at all).

(35) PZoq *häm: CZ, NZ, SP ham; NeZ (Ocpc., Ppc., SBtolo., Chpgo.) hap; T hem; M ham *lime*.

(36) PZoq *hon: CZ, NZ, SZ (Tux.), WZ, SP hon; NeZ (Tapal., Ocpc., Chpgo.) hot; M hon *bird* (in CZ and possibly others the form is taboo *male genitals*).

(37) PZoq *hʌyʌ: CZ, NZ, NeZ (Tapal., Ppc.), SZ (Tux.), WZ hʌyʌ; M pʌhy *flower* (but cf. M pʌhp *it blossoms*; also SP mo·ya *flower*).

1.3. Correspondences with nasals *m, *n are traced in word initial position, and with *m, *n, *ŋ in word final position (*ŋ is lacking word initially). In intervocalic position the picture is somewhat confused: in the NeZ dialects, *-m-, *-n-, *-ŋ- appear in some words as nasals, in others as voiced stops, in still others as voiceless stop + nasal; the conditioning factors can probably be found only after more work is done on the structure of the NeZ dialects, and in some of these cases the PZoq form will probably have to be set up with an intervocalic consonant cluster.

1.3.1. PZoq *m-, *n- correspond in all the dialects to m-, n- respectively when word initial. We cite one example of each; see also examples 25, 29, 44, 48, 65, etc.

*m- (word initial):

(38) PZoq *mohk: CZ, NZ, SZ (both), WZ (?), SP, M mok; NeZ (all) mohk; T mak *maize*.

*n- (word initial):

(39) PZoq *nʌ?: CZ, NZ, NeZ (all), SZ (both), WZ, SP nʌ?; M nʌ·; T noo *water*.

1.3.2. PZoq *-m, *-n, *-ŋ (word final) correspond respectively to -m, -n, -ŋ in CZ, NZ, SZ (Tux.), WZ. In certain words in the NeZ dialects, they correspond to -p, -t, -k; in certain other words of the same dialects they correspond to -m, -n, -ŋ. The correspondences are not all the same for all NeZ dialects, but the tendency is for the correspondences with -p, -t, -k. In SP, *-m > -m, *-ŋ > -ŋ (but -ñ after i), *-n > -n (but sometimes -ñ, not always explained). In M and T, *-m > -m (but -p in certain M

words), *-n > -n (but -ñ in certain M words and -ŋ in certain T words), *-ŋ > zero (or probably vowel length). Examples shown here are limited to the more regular correspondences; see also examples 2, 4, 5, 17, 24, 35, 36, 53.

*-m (word final):

(40) PZoq *hăm: CZ, NZ, SP, M ham; NeZ (Ocpc., Ppc., SBtolo., Chpgo.) hap; T hem *lime* (same as 35).

*-n (word final):

(41) PZoq *cin: CZ, NZ, SZ (Tux.), WZ, M cin; NeZ (all) cit; T ciŋ *pine*; in the SP form čiŋkuy *pine tree* the reflex of *n is no longer word final. (Same as example 7).

*-ŋ (word final):

(42) PZoq *tuŋ: CZ, NZ, SZ (Tux.), WZ, SP tuŋ; NeZ (all) tuk; M tu?u *road*.

(43) PZoq *tʌcʌ?ŋ: CZ, NeZ (Tapal., Ocpc.) tʌcʌ?ŋ; M tʌcʌ; T dóco *iguana*; the *-ŋ disappears in WZ tʌcʌ? *iguana* as well as in the M and T forms.

2. Morphophonemic correspondences.

Certain morphophonemic operations occur in some of the dialects but not in others. We assume these to be innovations. The geographic distribution of five of these morphophonemic operations is now shown, with examples for each.

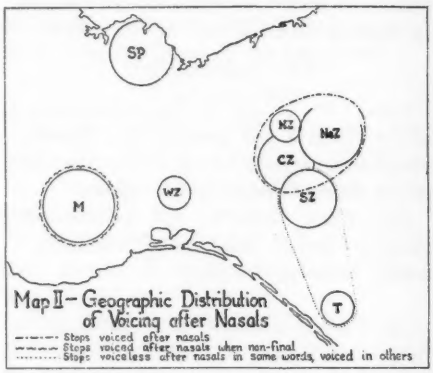
2.1. Voicing of stops after nasals.

In SP and WZ, stops remain voiceless after nasals. In CZ, NZ, NeZ, stops are voiced after nasals. In M, stops are voiced after nasals except when the cluster is word final. In T and SZ, stops are voiced after nasals in some words and voiceless in others. (In some of the dialects, the voicing is probably allophonic rather than phonemic.)

The geographic distribution of this phenomenon is shown on Map II. We now show examples of *p, *t, *k after nasals.

*p (after nasal):

(44) PZoq *nekŋ- + *pahk: CZ ne?ŋbak *foot*; NZ ne?ŋbak *shin*; NeZ (Ppc.) ne?ŋbahk; NeZ (Tapal.) nekmbahk *leg*.



MAP II

(45) PZoq *min- + *-pa: WZ minpa; SP miñpa; CZ, NZ minba *he comes*.

(46) PZoq *cam- + *-pa: WZ campa; CZ, NeZ (Chpgo.) camba *I speak* (cf. SP campa *to grow up*).

(47) PZoq *win (?) + *pahk: SP wiñpak *forehead*; CZ, NZ winbak; NeZ (Tapal., Ocpc.) witmbahk; NeZ (Ppc., SBtolo.) winbahk; NeZ (Chpgo.) widbak *tumpline* (cf. M wimbok *forehead*, in which the second morpheme is probably from a different PZoq morpheme *pohk).

*t (after nasal):

(48) PZoq *mäsän- + *tʌhk: T mehentok; CZ, NZ, SZ masandʌk *church*.

(49) PZoq *cin ~ *ci?ni- + *-tʌhk: SZ cintʌk (~ cindʌk); NeZ (Tapal., Ocpc.) cindʸʌhk; NeZ (Ppc.) ci?ndʸʌhk; NeZ (SBtolo.) ci?ndʌhk *pine forest*. In CZ, SZ ci?nitʌk and NeZ (Chpgo.) ci?nirʌk *pine forest* the reflexes of *t are not preceded by a nasal.

(50) Word final example in Mixe: tʌmt *seed* (cf. CZ tʌm *fruit*).

*k (after nasal):

(51) PZoq *ʔan- + *kopahk: CZ, NZ ŋgopak; NeZ (Ocpc. etc.) ŋgobahk; SP ʔaŋko·bak; T angopik *my head.* M ŋguahk *my head* is from *ʔan- plus a different PZoq form, but shows the voicing after the nasal.

(52) PZoq *maŋ- + *-kuy: WZ maŋkuy *foot* (*going instrument*); CZ maŋguy *act of going.*

(53) PZoq *ʔan- + *kaŋ: SP ʔaŋka·ŋ; CZ ŋgaŋ; M ŋga· *my jaguar.*

(54) Word final example in Mixe: hʌmk *feathers.*

2.2. Metathesis of *y with a following consonant.

In SP, SZ, WZ, a sequence of *y + C > yC (i.e. it remains unchanged). In M, *y + C > yCy when word medial, Cy when word initial. In CZ, NZ, NeZ, *y + C > Cy (except that word medially in CZ [and possibly NZ and NeZ] *y + *h > yh, and *y + *t > yt[y]). Data have not been correlated for T.

[Historical note: For CZ materials, the data from González[7] of 1672, and manuscripts shown by Cordry[8] dating from the middle of the 18th century, both show the absence of this type of metathesis in sequences where it occurs today. We therefore conclude that it is a late innovation at least so far as CZ is concerned.]

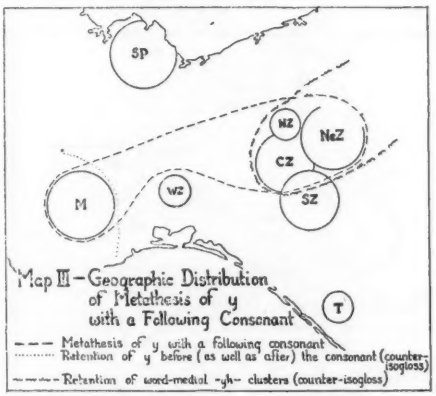
In Map III we show the distribution by means of an isogloss which delimits the entire area having metathesis of *y, and two counter-isoglosses or resisting isoglosses which mark areas where the metathesis is limited to certain positions.[9] Examples of this phenomenon are now given.

(55) PZoq *poy- + *-pa: SP, SZ poypa; CZ, NZ popya; NeZ (Tapal., Ppc., Chpgo.) pobya *he runs.*

(56) PZoq *hay- + *-pa: SP, WZ haypa; M haybya; CZ, NZ hapya; NeZ (Chpgo.) habya *he writes.*

(57) PZoq *hay- + *-kuy: SP haykuy; M hayky *pencil*; CZ, NZ hakyuy *act of writing.*

(58) PZoq *hʌy- + *-pa: SP hʌypa *he speaks*; WZ hʌypa *he weeps*; M hʌypy *he speaks*; CZ, NZ hʌpya *he weeps.*


SP
NZ
NeZ
CZ
SZ
WZ
M
T
Map III – Geographic Distribution of Metathesis of y with a Following Consonant
--- Metathesis of y with a following consonant
..... Retention of y before (as well as after) the consonant (counter-isogloss)
-·-·- Retention of word-medial -yh- clusters (counter-isogloss)

MAP III

(59) PZoq *kämä(k), preceded by 3rd person prefix which in the dialects ends in y or i: SP ʔika·ma; SZ kaykama; M kyam; CZ kyama *his cornfield.*

(60) PZoq *hoy- + *-mʌ: SP, SZ (Tux.) hoymʌ; SZ (Ocoz.) hoymi; NeZ (Ppc.) homyʌ; CZ, NZ, NeZ (Tapal., Ocpc.)

[7] González, Fray Luis. Arte Breve y Vocabulario de la Lengua Tzoque (1672). Edited and published by Raoul de la Grasserie in his Langue Zoque et Langue Mixe (Paris, 1898). This material is from Tecpatán, which is a dialect of CZ almost identical with the CZ of Copainalá.

[8] Cordry, Donald B. and Dorothy M. Costumes and Weaving of the Zoque Indians of Chiapas, Mexico. Southwest Museum Papers 15 (1941).

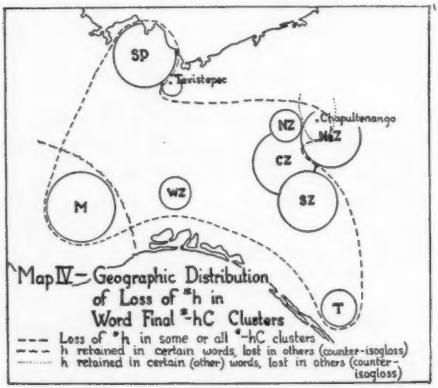
[9] The present-day distribution of the dialects as seen on the map suggests another possible alternative, i.e. that of postulating two centers of innovation and marking two different isoglosses to show the two types of metathesis. Our first alternative, however, is rendered not improbable by the geographical features, which completely isolate modern WZ from CZ and NZ but which suggest the probability of early contact of WZ with SZ and even T.

homi; WZ hohi; M hoypy *tomorrow*. (In the WZ and M examples it may be necessary to interpret the second element as a morpheme different from *-mʌ.)

2.3. Loss of *h in word final clusters of *-hC.

Word final PZoq *-hC always loses the *h in CZ, NZ, SZ, WZ, T, SP. In certain words the *h is also lost in M. In certain other words the *h is also lost in the Chapultenango dialect of NeZ.

This loss of *h from a cluster also occurs not only word finally but syllable finally in a number of the dialects; a complete study of



MAP IV

the phenomenon would therefore take into account the correspondences of loss of *h from word medial clusters as well. This has been omitted from the present paper, partly because the picture is somewhat confused by apparent exceptions which will require further study. However, the general picture for syllable final clusters in word medial position is the same as that given here for word final clusters.

In Map IV we show one main isogloss marking the entire area having loss of *h in all or some words, and two counter-isoglosses or resisting isoglosses which mark areas where the loss of *h is limited to certain words. We thus postulate one center of innovation for this phenomenon, with two areas where the phenomenon has not been carried to completion.

Map IV leaves part of the Popoluca area outside the main isogloss, as preliminary data collected by Elson indicates that the *h is not lost in the Texistepec dialect of Popoluca. Note the following Texistepec words: mohk *maize* (cf. example 61); tʌhk *house* (cf. 66); ʂʌhk *beans* (cf. 67).

Examples of words in which the *h is lost in CZ, NZ, SZ, WZ, T, SP, M; but not in NeZ:

(61) PZoq *mohk: CZ, NZ, SZ (both), WZ, SP, M mok; T mak; Nez (all) mohk *maize*.

(62) PZoq *kʌʔahk: CZ, NZ, SZ (both), WZ, SP kʌʔak; T kʔok (?); M kʌʔʌk (*sandal* in some dialects, *shoe* in others).

(63) PZoq *tʌhc: CZ, NZ, SZ (Tux.), WZ, SP, M tʌc; NeZ (Tapal., Ocpc., Ppc.) tʌhc *tooth*.

(64) PZoq *moʔoht: CZ, NZ moʔot; SP, M mʌʔʌt; NeZ (Tapal., Ocpc., Ppc.) moʔoht *father-in-law* or *son-in-law*.

(65) PZoq *nahs: CZ, NZ, SZ (Tux.), SP nas; M naˑʂ; NeZ (Tapal., Ocpc., Ppc.) nahs *earth*.

Examples of words in which the *h is lost in CZ, NZ, SZ, WZ, T, SP; but not in NeZ or M:

(66) PZoq *tʌhk: CZ, NZ, SZ (both), SP tʌk; T tok; NeZ (all), M tʌhk *house*.

(67) PZoq *sʌhk: CZ, NZ, SZ (both), SP sʌk; WZ ʂʌk (?); NeZ (all) sʌhk; M ʂʌhk *beans*.

(68) PZoq *cahp: CZ, NZ, SZ (Tux.) cap; WZ capha *sky*; SP caˑp *south*; NeZ (Tapal., Ocpc., Ppc., Chpgo.), M cahp *sky*.

(69) PZoq *pahk: CZ, NZ, SZ (Tux.), WZ, SP pak; NeZ (Tapal., Ocpc., Ppc., Chpgo.), M pahk *bone*.

Examples of words in which the *h is lost in CZ, NZ, SZ, WZ, T, SP, and the Chapultenango dialect of NeZ; but not in NeZ (exclusive of Chpgo.) or M. (All examples observed of this type are dissyllabic.)

(70) PZoq *kopahk (the second mor-

pheme = 69 above): CZ, NZ, SZ (Tux.), WZ kopak; T angopik (possessed form); SP ko·bak; NeZ (Chpgo.) kobak; NeZ (Tapal., Ocpc., Ppc., SBtolo.) kobahk *head*; M kupahk *skull*.

(71) Compare also PZoq *hukʌtʌhk: CZ hukʌtʌk; NeZ (Chpgo.) huktʌk; NeZ (Tapal., Ocpc., Ppc.) huktʌhk *fire*. In SZ (Tux.) hukʌtʌ, SP huktʌ *fire* the entire word final consonant cluster has disappeared.

Note also example 15 above, in which the *h is lost in CZ, NZ, SP, and the Ocotepec and Chapultenango dialects of NeZ, but not in the Tapalapa and Pantepec dialects of NeZ.

2.4. Palatalization of *c to č before i.

In SP and T, *c > č before i; in the other dialects *c remains c. This type of palatalization extends to other alveolar phonemes, at least in SP. It is also conditioned in T (but not in SP) by the vowel set up as PZoq *ä (cf. example 8 above). This gives us actually two types of palatalization; but examples given in this section are limited to those showing palatalization of *c before i.

From the geographic distribution of this phenomenon (or of the two related phenomena) as shown in Map V, we postulate two centers of innovation near the opposite extremes of the Zoquean area, both of them sufficiently recent as not to have spread to the Zoque[10] and Mixe dialects.

(72) PZoq *cin: SP čiŋkuy *pine tree*; T čiŋ; CZ, NZ, SZ (Tux.), WZ, M cin; NeZ (Ocpc., SBtolo., Chpgo.) cit *pine*.

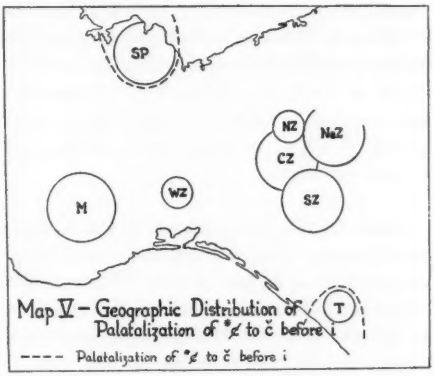
(75) PZoq *ciku: SP či·ku; CZ, NeZ (Tapal., Ocpc., Chpgo.), WZ ciku; M ci·k *tejón* (species of animal).

For additional examples, see 8, 23, and 26 above.

[10] There are sporadic forms in Zoque which suggest borrowings from an area which had this type of palatalization: cf. CZ ʔanemuč *toasted tortilla* (the second element from PZoq *muci(ʔ); ʔanemuč occurs alongside the more frequent form ʔanehaʔse); also NZ ʔačʌ ∽ ʔačpʌ in example 26 above.

2.5. Reflexes of *W.

Certain correspondences in Zoque and Popoluca lead to the setting up of a PZoq *W. The morphophonemic phenomena which concern this are now shown for each of the two languages, and a statement of the correspondence is given in **2.5.4.** More complete data from the other dialects would probably shed further light on this correspondence, but the material now available is considered adequate to establish it as valid.



MAP V

2.5.1. In CZ, certain vowel-initial suffixes are set up as beginning with a morphophoneme X.[11] The specific suffixes to be treated in this paper are -X$^{a}/_{ʌ}$[12] (imperative) and -X$^{i}/_{ø}$ (nominalizer or inflectional suffix after negative auxiliary). The X is phonetically zero, but conditions the

[11] A detailed statement of the phenomena relating to the CZ morphophoneme X is contained in chapter 3 of my Zoque Phonemic and Morphological Structure (University of Michigan doctoral dissertation, 1947; inedit.)

[12] Most CZ suffixes set up with morphophoneme X are also characterized by vowel harmony i/e or a/ʌ. Since the vowel harmony is limited in our materials to the Zoque dialects, no attempt is made to use it as a basis of any type of reconstruction; however, it may possibly be pertinent to a thorough comparative investigation of the reflexes of *W.

following morphophonemic operations in CZ:

When a cluster of h plus consonant precedes X, the h is lost; i.e. -hC- + X- > -CX- (= -C-). Examples: peht- *to sweep* + -X$^{a}/_{ʌ}$ > petaʌ *sweep*!; waht- *to tie* + -X$^{a}/_{ʌ}$ > watʌ *tie it*!; huhk- *to smoke* + -X$^{i}/_{e}$ > huki *cigarette*.

When ŋ follows a vowel and precedes X, the ŋ is replaced by w; i.e. Vŋ + X > VwX (= Vw). Examples: ciŋ- *to bathe* + -X$^{a}/_{ʌ}$ > ciwʌ *bathe*!; the same stem + -X$^{i}/_{e}$ > ciwi (as in haʔn čiwi *he does not bathe*); maŋ- *to go* + -X$^{a}/_{ʌ}$ > mawʌ *go*!

When h follows a vowel and precedes X, the h is replaced by w or y; i.e. Vh + X > VwX or VyX (= Vw or Vy). Examples: tuh- *to shoot* + -X$^{a}/_{ʌ}$ > tuwʌ *shoot*!; yah- *to end* + -X$^{i}/_{e}$ > yaye (as in haʔn yaye *it does not end*).

2.5.2. In NZ, the presence of the X morphophoneme does not condition a change from h to y as it does in CZ. Contrast the following NZ example with the CZ example at the end of the preceding paragraph: yah- *to end* + -X$^{i}/_{e}$ > yahe (as in hiʔn yahe *it does not end*). Other phenomena conditioned by X in the NZ dialect are similar to those in CZ, although our materials are insufficient for a complete statement.

In NeZ, the phenomena are also similar, but await more complete data for a full statement.

2.5.3. In SP, there appear at least two suffixes which are cognate with suffixes set up with the morphophoneme X in CZ. In SP they are set up with a morphophoneme *V* preceding the vowel but non-contiguous with it. Thus the suffixes that correspond to CZ -X$^{a}/_{ʌ}$ and -X$^{i}/_{e}$ are written as SP -*V*...ʌ and -*V*...i. The *V* may be actualized phonemically[13] or may be lost, according to the following morphophonemic operations:

The vowel of a CVC- stem is lengthened when a suffix beginning with *V* is added (i.e. *V* is actualized as length on the stem vowel). Examples: pet- *to sweep* + -*V*...ʌ > peːtʌ *sweep*!; wat- *to make* + -*V*...ʌ > waːtʌ *make it*!; čiŋ- *to bathe* + -*V*...ʌ > čiːŋʌ *bathe*!; huk- *to smoke* + -*V*...i > huːki *cigarette*; heh- *to pant* + -*V*...ʌ > heːhʌ *rest*!; the same stem + -*V*...i > heːhi (as in nʌkpa heːhi *he is going to rest*).

The vowel of a CVʔC- stem is reduplicated after the ʔ when a suffix beginning with *V* is added (i.e. the *V* is actualized as a vowel identical with the stem vowel). Examples: kuʔt- *to eat* + -*V*...ʌ > kuʔutʌ *eat it*!; wiʔk- *to eat* + -*V*...ʌ > wiʔikʌ *eat*!

The *V* actualizes as zero (i.e. is lost) when a suffix beginning with *V* is added to a CVCC- or CVCCC- stem (other than CVʔC-). Examples: tʌks- *to play* + -*V*...ʌ > tʌksʌ *play it*!; tʌʔps- *to twist rope* + -*V*...ʌ > tʌʔpsʌ *twist it*!; same stem + -*V*...i > tʌʔpši *rope*.

2.5.4. We thus have CZ X (and its correspondences in other Zoque dialects) corresponding with SP *V*. This points to a PZoq phoneme (or phonemic feature) which we set up as *W.

The symbol *W is quite arbitrary, but certain characteristics of the reflexes of *W do suggest that it may have been some type of semivowel. Its vocalic character is seen in the phonemic actualizations of SP *V*. Its consonantal character is seen in the morphophonemic operation of CZ X after an -hC- cluster, where the loss of h parallels the loss of h in -hC- clusters before other consonants. Further, the loss of SP *V*

[13] In the actual history of my investigation, the CZ morphophoneme X was set up some years ago as a zero morphophoneme and described on the basis of purely synchronic data. It was in a recent conversation with Elson that I was informed of the phonemic actualization in SP of the morphophoneme here symbolized by *V*, which thus provides an interesting confirmation of the morphophonemic analysis made for CZ.

with CC and CCC clusters suggests that it has been lost as a consonant-like member of a cluster *WCC or *WCCC. The semivocalic character of *W is suggested by the CZ changes of ŋ to w and of h to w or y when followed by X.

An additional hypothesis, albeit a rather tenuous one, as to the phonemic nature of PZoq *W is based on the fact that in CZ and SP (and certain other dialects) the phoneme w (reflex of PZoq *w) does not appear in word final position, and appears in syllable final position in a very limited number of intervocalic -CC- clusters most of which are in Spanish loans. If, then, we set up CZ X as from a PZoq phoneme *W which was inserted after the vowel of the preceding syllable (as the *V* in SP), the *W would have been syllable final. If PZoq *w is found to be lacking in syllable final position, as the CZ w tends to be, then *W would be in complementary distribution with *w and hence equateable to it phonemically. The subsequent reduction of syllable final *W (if equated with *w) to the status of a morphophoneme whose phonemic value is zero in CZ would then help to account for the defective distribution of w in CZ. Since, however, the equation of *W with *w is not yet satisfactorily demonstrated, we continue to distinguish between them in writing the reconstructed forms.

THE APACHEAN VERB, PART V: THE THEME AND PREFIX COMPLEX

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1. Verb base and verb theme
2. Stem configurations of the round object theme
3. The momentaneous stem configuration
4. The continuative stem configuration
5. Repetitive and semelfactive stem configurations
6. Diversative, reversative, distributive, conative, and transitional
7. Examples of other themes and stem configurations
8. The adverbial prefix complex
9. Summary

1. As we have noted in the preceding papers of this series,[1] Apachean verb bases, if neuters, are conjugated in only one paradigm and possess but one stem. Active verb bases, however, must be conjugated in seven tense-modal paradigms and may have more than one stem.

When we compare verb bases with one another it soon becomes apparent that many resemble each other in certain respects. Put another way, the base turns out, in most cases, to be composed of an adverbial prefix complex and a theme. Both these segments may often appear in many different combinations. Thus, the prefix complex nà- . . . (y- ipf., s- pf.) *about, here and there* is by no means confined to a single theme but may combine with numerous themes to form bases similar in respect to their adverbial prefixes.[2] In the same way the theme -ʔà·š, -ʔá·ž, -ʔàš, -ʔàš, -ʔà·š *two animate beings move* is not only part of the base nà- . . . (y- ipf., s- pf.)-zero-ʔà·š, -ʔá·ž, -ʔàš, -ʔàš, -ʔà·š *two animate beings travel about here and there* (act. intr.) but is also used with the following adverbial prefix complexes, among others, to form different bases: di- . . . (s- pf.)-zero- *two animate beings start to move* (act. intr.), O-tà·- . . . (y- ipf., s- pf.)-zero- *two animate beings go among (them)* (act. intr.), tá-di- . . . (y- pf.)-zero- *two animate beings move about from place to place* (act. intr.), ná- . . . (n- ipf., n- pf.)-d- *two animate beings return (to the starting point)* (act. intr.).

2. In many cases of themes which are used in a number of bases, the stem configuration remains the same in all the bases in which the theme appears. The theme -ʔà·š, -ʔá·ž, -ʔàs, -ʔàs, -ʔà·š *two animate beings move*, for example, has this form in all the thirty-odd bases of which it forms a part. But this is not true of all themes: some have two or more stem configurations each of which may be employed only in certain classes of base. The best example of this phenomenon is found in the round object theme (i.e. the theme underlying the many bases having a so-called "round object" as actor or goal)[3] in which we find no less than eight

[1] See IJAL 11.193–203 (1945); 12.1–13, 12.51–59 (1946); and 14.247–259 (1948).

[2] All examples are taken from Navaho. I should here acknowledge my indebtedness to the late Edward Sapir who was the first to work out the verb analysis presented in these papers. Unfortunately, however, Sapir never found the time to write up this analysis in detail and I have been obliged to reconstruct it from his Navaho data and from the few discussions and letters I had from him during his life.

[3] For a discussion of the round object verb and other classificatory verb stems see my paper in IJAL 11.13–23.

distinctive stem configurations. These may be tabulated as follows:

		Ipf.	Pf.	Prog.	Iter.	Opt.
Neuter stem....		-	-ʔá	-	-	-
Active stems..	Mom.:	-ʔà·h	-ʔá	-ʔá·ɬ	-ʔá·h	-ʔá·ɬ
	Cont.:	-ʔá	-ʔá	-ʔà·ɬ	-ʔà·h	-ʔà?
	Div.:	-ʔà·h	-ʔá	-ʔà·ɬ	-ʔá·h	-ʔá·ɬ
	Rev.:	-ʔá	-ʔá	-ʔá·ɬ	-ʔá·h	-ʔá·ɬ
	Dist.:	-ʔà?	-ʔá	-ʔà·ɬ	-ʔà·h	-ʔà?
	Con.:	-ʔá·h	-	-	-	-
	Trans.:	-ʔà·h	-ʔà?	-ʔà·ɬ	-ʔà·h	-ʔà?

Note that the active stem configurations sometimes differ very little from one another. Thus, the momentaneous and reversative configurations differ only in the form of the imperfective stem: -ʔà·h for the momentaneous and -ʔá for the reversative. Similarly, the continuative and distributive differ only in the imperfective: cont. ipf. -ʔá vs. dist. ipf. -ʔà?. This suggests that the Apachean languages have leveled their verb stems; an impression that is further confirmed by the fact that the theme *two animate beings move*, quoted above, reveals no stem differences of the type illustrated for the round object theme, even though the former is used with almost as many adverbial prefix complexes as the latter. The fact that such leveling has taken place makes it somewhat more difficult to understand the few differences that remain.

3. The distinctions of meaning connoted by the seven active stem configurations of the round object theme may be illustrated by comparing briefly the bases which employ each configuration. Most of the round object bases use the momentaneous configuration, so-called because it appears to denote momentaneous action, action which takes place at a point in time rather than continuously through a time period. Examples follow:

Oà·- . . . (n- ipf., n- pf.)-zero-mom. *to give a round object to (him)*; lit. *to cause a round object to move to (him)*, Act. tr. ʔa- . . . (y- ipf., y- pf.)-zero-mom. *to take a round object away*, Act. tr. dàh-di- . . . (y- ipf., y- pf.)-zero-mom. *to start off with a round object*, Act. tr. di- . . . (s- pf.)-zero-mom. *to begin to carry a round object*, Act. tr. na- . . . (y- ipf., y- pf.)-zero-mom. *to lift a round object down*, Act. tr. ná- . . . (n- ipf., n- pf.)-zero-mom. *to return with a round object*, Act. tr. ná-di- . . . (y- ipf., y- pf.)-zero-mom. *to pick up a round object*, Act. tr. nì- . . . (n- ipf., n- pf.)-zero-mom. *to put a round object down*, Act. tr. ha- . . . (y- ipf., y- pf.)-zero-mom. *to take a round object out (of an enclosed space)*, Act. tr.

4. Continuative stems are employed when the action continues over a period of time. In the round object verb only bases including the prefix nà- *about, here and there* use this stem configuration:

nà- . . . (y- ipf., s- pf.)-zero-cont. *to carry a round object about*, Act. tr. The meaning here may be further illustrated by two examples drawn from Navaho Texts.[4] See NT 17.2 where Owl is being told what his duties are to be: hànì? *news* | nànì?á·-dò·lè·ɬ *you will be carrying it* (e.g. news, here classed as a "round object") *about* (nànì?á, 2nd p. ipf.; dò·lè·ɬ *it will be* causes the stem -ʔá to lengthen and take the falling tone). Also in NT 313.2 where the function of the basketry water jug is being explained: bè· *by means of it* (e.g. the water jug) | tó *water* | ǹdàì?á· ńt'é·? *they used to carry water about* (ǹdàì?á, 3rd p. ipf.; ńt'é·? *it used to be* causes the stem vowel to lengthen).

The distinction between momentaneous and continuative, especially in the imperfective, is widely maintained in the Apachean languages today, as is illustrated by the following:

di- . . . (s- pf.)-zero-ʔé·š *to begin to lead*

[4] Edward Sapir and Harry Hoijer, Navaho Texts (Linguistic Society of America: 1942). Hereinafter abbreviated NT. References are given to page and paragraph; e.g. NT 17.2 means Navaho Texts, page 17, paragraph 2.

(*them; e.g. several animals*) vs. ná- . . . (y- ipf., s- pf.)-zero-ʔè·š *to lead* (*e.g. several animals*) *about here and there* (the other four stems -ʔè·ž, -ʔìš, -ʔìš, -ʔé·ž are the same in both bases).

ná-di- . . . (s- pf.)-ɬ-ʔí·h *to hide* (*it*) vs. nà-ni- . . . (s- pf.)-ɬ-ʔìn *to keep* (*it*) *hidden* (the other four stems -ʔí·ʔ, -ʔí·ɬ, -ʔí·h, -ʔí·ʔ are the same in both bases).

ná-di- . . . (y- ipf.,)-zero-bá·h *to start off on the war-path* vs. nà- . . . (y- ipf., s- pf.)-zero-bà·h *to go about making war* (-bà·ʔ, -bàh, -bàh, -bá·h the same in both bases).

nì- . . . (n- ipf., n- pf.)-ɬ-tè·h, -tí, -té·ɬ, -té·h, -té·ɬ *to put an animate object down* vs. nà- . . . (y- ipf., s- pf.)-ɬ-té, -tí, -tè·ɬ, -té·h, -té·ɬ *to carry an animate object about.*

Oà·-di- . . . (y- ipf., y- pf.)-zero-há·h, -yá, -há·ɬ, -há·h, -yàʔ *one being walks away from* (*him*), *out-distances* (*him*) vs. nà- . . . (y- ipf., s- pf.)-zero-há, -yá, -hà·ɬ, -hà·h, -yàʔ *one being walks about.* The continuative sense of the latter base is emphasized by its secondary meaning, viz. *one being lives, spends his life.*

5. In other themes we may note different aspectival stem forms, such as the repetitive and semelfactive. The repetitive connotes an action viewed as an unanalyzable series of acts; it is not to be confused with the iterative, which implies repetition of the action itself. The semelfactive defines a single act as abstracted from an unanalyzable series; not, as in the momentaneous, an action performed in a moment of time. Examples follow:

The theme *to handle a blanket-like object* distinguishes, in the imperfective, between -ʔá·d, mom., -ʔàd, cont., and -ʔàʔ, rep.: ná-di- . . . (y- ipf., y- pf.)-zero-ʔá·d *to hit* (*him*) *once with a blanket-like object* vs. ná-ni- . . . (s- pf.)-zero-ʔàd *to keep hitting* (*him*) *with a blanket-like object* and dàh-di- . . . (y- ipf., y- pf.)-zero-ʔá·d *to wave a blanket-like object once, to give* (*it*) *a wave* vs. dàh- . . . (y- ipf. only)-zero-ʔàʔ *to wave a blanket-like object* (*repeatedly or as an unanalyzable series of acts*).

Oì·h- . . . (y- ipf., y- pf.)-zero-ʔé·s, -ʔè·z, -ʔìs, -ʔìs, -ʔé·s *to put on moccasins;* lit. *to move one's feet into* (*it*) vs. . . . (s- pf.) -zero-ʔìz, -ʔìz, -ʔìs, -ʔìs -ʔé·s *to bicycle*; lit. *to move one's feet repeatedly.* The first is the momentaneous and the second the repetitive stem configuration of the theme *to move one's feet.*

ʔa-di- . . . (s- pf.)-ɬ-dè·ɬ, -dé·l, -dìɬ, -dìɬ, -dè·ɬ *to make one throw in the stick-dice game* vs. ʔa-di- . . . (y- pf.)-ɬ-dìɬ, -dé·l, -dìɬ, -dìɬ, -dìɬ *to play the stick-dice game;* lit. *to throw several objects repeatedly.* Semelfactive and repetitive stem configurations, respectively, of the theme *several objects* (*or a rope*) *move through space.*

ha- . . . (y- ipf., y- pf.)-ɬ-dí·s, -dìz, -dìs, -dìs, -dí·s *to twist* (*it*) *out* (*of an enclosed space*), di- . . . (y- ipf., s- pf.)-ɬ-dìs, -dìs, -dìs, -dìs, -dìs *to give* (*it; e.g. a top*) *one spin,* and . . . (y- ipf., s- pf.)-zero-dìz, -dìz, -dìs, -dìs, -dìz *to spin* (*e.g. wool into yarn*). Momentaneous, semelfactive, and repetitive, respectively, of the theme *to turn, twist, spin.*

yí-ní-yi- . . . (y- pf.)-ɬ-tą́·š, -tą̀ž, -tą̀š, -tą̀š, -tą̀·š *to shoot at* (*him*), ná- . . . (n- ipf., n- pf.)-ɬ-tą̀š, -tą̀ž, -tą̀š, -tą̀š, -tą̀š *to flip* (*it*) *off, to give* (*it*) *one sharp blow,* . . . (y- ipf., s- pf.)-ɬ-tą̀ž, -tą̀ž, -tą̀š, -tą́š -tą̀ž *to tap at* (*it*) (*with the finger*), *to peck at* (*it*) (*with the bill*); lit. *to give* (*it*) *one unanalyzed series of blows.* Momentaneous, semelfactive, and repetitive, respectively, of the theme *to strike sharply.*

ki- . . . (n- ipf., n- pf.)-zero-tí·h, -tìʔ, -tìh, -tìh, -tí·h *to break* (*it; i.e. one stick*) *off,* ké-ná-hi-ni- . . . (s- pf.)-zero-tìh (other stems the same) *to fold up the heel* (*in making a moccasin*); lit. *to give the heel a break around,* . . . (y- ipf., y- pf.)-zero-tìʔ (other stems the same) *to break* (*them*) *up* (*e.g. sticks, twigs*). Momentaneous, semelfactive, and repetitive, respectively of the theme *to break* (*a twig-like, brittle object*).

ha- . . . (y- ipf., y- pf.)-zero-gé·d, -gè·d, -gòł, -gò?, -gé·d *to dig (it) out,* nà- . . . (y- ipf., s- pf.)-gè·d (other stems the same) *to shovel (it) here and there,* ná-ho- . . . (n- ipf., n- pf.)-zero-gòd (other stems the same) *to hoe*; lit. *to dig in an unanalyzable series of acts.* Momentaneous, continuative, and repetitive, respectively of the theme *to dig.*

6. The remaining five stem configurations of the round object theme are illustrated as follows:

(a) Diversative (action moving to different places in turn): tá-di- . . . (y- pf.)-zero-?à·h, -?ą́, -?à·ł, -?á·h, -?à·ł *to take a round object about from place to place.*

(b) Reversative (action moving around, action reversed): ná-hi- . . . (s- pf.)-zero-?á, -?ą́, -?á·ł, -?á·h, -?á·ł *to turn a round object over;* lit. *to cause a round object to move around, in a reverse direction.*

(c) Distributive (action moving distributively here and there): O-tà·-?a- . . . (s- pf.)-zero-?à?, -?ą́, -?à·ł, -?à·h, -?à? *the sun travels among (e.g. the clouds)*; lit. *a certain round object moves distributively among (them).* nà-?a- . . . (s- pf.)-zero-(same stems) *the sun travels here and there*; lit. *a certain round object moves distributively about.* nà-di- . . . (s- pf.)-zero-(same stems) *to go here and there singing*; lit. *to carry a song* (classed as a "round object") *distributively here and there.* ǩí-dà- . . . (y- ipf., y- pf.)-zero-(same stems) *to tell the main (or several) parts of (e.g. a story), to give information on certain parts of (it)*; lit. *to put round objects out here and there.*

It is of interest to note that the prefix nà- *about, here and there* is used with both the continuative and the distributive stem configurations (see **4**). With continuative stems nà- connotes action that moves continuously about, here and there; see especially (**4**) the secondary meaning of the base nà- . . . (y- ipf., s- pf.)-zero-há, -yá, -hà·ł, -hà·h, -yà? *one animate being lives* (i.e. *moves about over a period of time*). With distributive stems the emphasis is on the distribution of the action over space or time, as is evident from examples just quoted.

(d) Conative (action attempted repeatedly) (this aspectival or, more properly modal, variant occurs only in the ipf.): Oí-ho-hi- . . . (ipf. only)-zero-?á·h *to keep bothering (him), to annoy (him) continually*; lit. *to try to move a round object against (him)* (?). dàh- . . . (y- ipf. only)-zero-?á·h *to try repeatedly to force one's way with a round object.* This form is used in NT 383.2. A storekeeper and some Navaho are besieged by a group of hostile Indians. At one point in the proceedings: dìné łà? *one man* | ?á·ǯí bìčǫ́·nî· *of the opposition* | cénìł *axe* | dàhì?a·hgò (3rd p. y- ipf. con. + -gò, subord.) *he tries to force his way with (the axe)* | dí· *this* | ?ìhìdìdò·lkàł *it will be chopped to bits* | bìnì·yé *for that purpose* | dá·díłkàł *(the) door.* Free translation: *One man of the opposition (came) trying to force his way with an axe by chopping the door to bits.* ?àł-yà-?a-di- . . . (ipf. only) -zero-?á·h *several dispute with one another*; lit. *several try to take the word from each other.*

(e) Transitional. These, in meaning, appear to bridge the gap between neuter bases, in which the actor is defined in a state of being and active verbs, in which the actor is behaving or doing something. Structurally, of course, bases employing transitional stems are active. Examples: yì- . . . (y- ipf., y- pf.)-zero-?à·h, -?à?, -?à·ł, -?à·h, -?à? *round object comes into being, moves into action.* More concretely with nà·niš *work* as actor, the base means *work comes into being, work comes to be done* (as contrasted with the neuter phrase nà·niš sì?ą́ *work is, exists*). Similarly, hàyá *knowledge* may be used as actor: *knowledge comes into being, (people) become wise, sensible.* In its transitive form yì- . . . (y- ipf., y- pf.)-ɬ- (same stems as before) means *to cause a round object to come into being,* i.e. *to engage in an undertaking, to put on a ceremony,* etc.

Other examples: Oá-ho-yì- . . . (y- ipf., y- pf.)-zero- (trans. stems) *a place is made for* (*him*), *a date is set for* (*him*). Oí-nì-yì- . . . (y- ipf., y- pf.)-zero- (trans. stems) *grief, sorrow affects* (*him*), *comes into being against* (*him*). O-tà?-ho-yì- . . . (y- ipf., y- pf.)-zero- (trans. stems) *spaces, intervals get to be between* (*them*) (e.g. *a group of men become lined up with intervals between them*).

7. The round object theme, because it is used in an exceptionally large number of bases, is far more diverse than most others. There are, however, other themes which exhibit some or all of the stem configurations just illustrated. Examples follow:

(1) The long object theme.

		Ipf.	Pf.	Prog.	Iter.	Opt.
Neuter stem. . . .		-	-tą́	-	-	-
Active stems. .	Mom.:	-tì·h	-tą́	-tí·ɬ	-tí·h	-tą́·?
	Cont.:	-tìn	-tą́	-tì·ɬ	-tì·h	-tí·ɬ
	Div.:	-tì·h	-tą́	-tì·ɬ	-tí·h	-tą́·?
	Rev.:	-tí·h	-tą́	-tí·ɬ	-tí·h	-tą́·?
	Dist.:	-tì?	-tą́	-tì·ɬ	-tì·h	-tą́·?
	Con.:	-tí·h	-	-	-	-

Illustrative bases: . . . (s- pf.)-zero-tą́ *a long object is in position* (neut. intr.). di- . . . (s- pf.)-zero-Mom. *to begin to carry a long object.* nà- . . . (y- ipf., s- pf.)-zero-Cont. *to carry a long object about.* tá-di- . . . (y- pf.)-zero-Div. *to take a long object to different places.* ná-hi- . . . (s- pf.)-zero-Rev. *to turn a long object over.* nà-dà- . . . (s- pf.)-zero-Dist. *to place long objects here and there.* dàh- . . . (y- ipf. only)-zero-Con. *to try to force one's way with a long object.*

(2) The animate object theme.

		Ipf.	Pf.	Prog.	Iter.	Opt.
Neuter stem. . . .		-	-tí	-	-	-
Active stems. .	Mom.:	-té·h	-tí	-té·ɬ	-té·h	-té·ɬ
	Cont.:	-té	-tí	-tè·ɬ	-té·h	-té·ɬ
	Div.:	-tè·h	-tí	-tè·ɬ	-té·h	-té·ɬ
	Rev.:	-té·h	-tí	-té·ɬ	-té·h	-té·ɬ
	Dist.:	-tè?	-tè?	-tè·ɬ	-tè·h	-tè?
	Con.:	-té·h	-	-	-	-
	Trans.:	-tè·h	-tè?	-tè·ɬ	-tè·h	-tè·h

Illustrative bases: . . . (s- pf.)-zero-tį́ *one animate being lies* (neut. intr.). nì- . . . (n- ipf., n- pf.)-zero-Mom. *one animate being lies down.* nà- . . . (y- ipf., s- pf.)-ɬ-Cont. *to carry an animate being about.* tá-di- . . . (y- pf.)-ɬ-Div. *to take an animate being to different places.* ná-hi- . . . (s- pf.)-ɬ-Rev. *to turn an animate being over.* nà- . . . (y- ipf., a- pf.)-zero-Dist. *an animate being lies down first in one place, then in another.* ?àɬ-yà- . . . (ipf. only)-ɬ-Con. *to contend with one another for an animate object* (*i.e. to try to take the animate object from one another*). dàh-hi-yì- . . . (y- pf.)-d-Trans. *an animate being dashes off, makes a quick start.*

(3) The several object theme.

		Ipf.	Pf.	Prog.	Iter.	Opt.
Neuter stem. . . .		-	-nìl	-	-	-
Active stems. . .	Mom.:	-ní·ɬ	-nìl	-nìɬ	-nìɬ	-ní·ɬ
	Rev.:	-nìɬ	-nìl	-nìɬ	-nìɬ	-nìɬ
	Dist.:	-nìl	-nìl	-nìɬ	-nìɬ	-nìl

Illustrative bases: . . . (s- pf.)-zero-nìl *several objects are in position* (neut. intr.). nì- . . . (n- ipf., n- pf.)-zero-Mom. *to put several objects down.* ná-hi- . . . (s- pf.)-zero-Rev. *to turn several objects over.* nà-dà- . . . (y- ipf., s- pf.)-zero-Dist. *to set several objects down each in its place.*

(4) The theme *one animate being moves.*

		Ipf.	Pf.	Prog.	Iter.	Opt.
Active stems. .	Mom.:	-há·h	-yá	-há·ɬ	-há·h	-yà?
	Cont.:	-há	-yá	-hà·ɬ	-hà·h	-yà?
	Div.:	-há·h	-yá	-hà·ɬ	-hà·h	-yà?
	Dist.:	-hà?	-yá	-hà·ɬ	-hà·h	-yà?

Illustrative bases: di- . . . (s- pf.)-zero-Mom. *one animate being starts to go.* nà- . . . (y- ipf., s- pf.)-zero-Cont. *one animate being moves about, lives.* tá-di- . . . (y- pf.)-zero-Div. *one animate being goes to different places.* yàh-dà-di- . . . (s- pf.)-d-Dist. *one animate being goes about begging from place to place.*

(5) The theme *to eat.*

		Ipf.	Pf.	Prog.	Iter.	Opt.
Active stems	Mom.:	-γí·h	-yą́·ʔ	-γí·ɬ	-γí·h	-γí·h
	Cont.:	-yą́	-yą́·ʔ	-γí·ɬ	-γí·h	-yą́·ʔ
	Dist.:	-yą̀ʔ	-yą́·ʔ	-γí·ɬ	-γí·h	-yą́·ʔ

Illustrative bases: O-ʔa-ni-yì- . . . (y- pf.)-zero-Mom. *to begin to eat.* . . . (y- ipf., y- pf.)-zero-Cont. *to eat (along).* nà- . . . (y- ipf., s- pf.) -zero-Dist. *to go about eating here and there.*

8. We may now turn our attention to the second portion of the verb base: the adverbial prefix complex. This, as we have seen, may vary in size from zero (e.g. in the base . . . [y- ipf., s- pf.]-zero-bé·ž, -bé·ž -bìš, -bìš, -bé·ž *to boil,* act. intr.) to a combination of several prefixes, as in Oà·-nì-ná·-hi- . . . (n- ipf., n- pf.)-d-há·h, -yá, -há·ɬ, -há·h, -yàʔ *one animate being lies down in wait for (him), lies down to (ambush him),* act. intr. Prefix complexes are quite as numerous as themes, perhaps even more so. They do not, however, vary grammatically though, as we have already noted, the prefix complex does govern the type of imperfective and perfective paradigm used by the base to which they belong.

To illustrate the way in which the prefix complex and theme function together to build up the meaning of the verb base we shall list and analyze in some detail all of the bases formed from the round object theme.

Neuter bases.

(1) . . . (s- pf.)-zero-ʔą́ *a round object is in position.* Neut. intr. . . . (s- pf.)-ɬ-ʔą́ *to have a round object in position.* Neut. tr.

(2) . . . (n- pf.)-zero-ʔą́ *round objects lie in a line, one after another.* Nos. 1, 2 differ only in their pf. paradigms. See NT (70, line 4) ńléi *over there* | sìʔánígí· *that round object which lies* (rel. in -ígí· of no. 1; sìʔą́ + -ígí· > sìʔánígí·) | tózìs *water bottle* | γòlγé *it is so-called.* Cf. NT 329.1: ťá·hàtàʔ *between them* | hòníʔą̀·gò *places lying in a line* (no. 2 with place pronoun ho- and subord. encl. -gò) | ʔàłké·ʔ *after one another* | hìždìlγè-·dgò *they starting off at a run.* Freely: *(the men) starting off at a run, one following the other at regular intervals.*

(3) ʔa- . . . (s- pf.)-zero-ʔą́ *the sun is in position.* Neut. intr. This is no. 1 with ʔa-, the indefinite pronoun prefix: *a certain (indef.) round object is in position.* As the indef. 3rd p. of no. 1, the form occurs in ʔàzʔánì· *the main corral,* lit. *that indef. round object which lies* (ʔàzʔą́ + -í·, *that which*). But no. 3 has become specialized in meaning to refer to the sun's position (and, in active bases, to the movements of the sun; see nos. 18–29). See, for example, NT 199.1: ťá·ʔákò ʔàzʔą̀·gò *when the sun is in the same position.* ťá·ʔàkò *the same;* ʔàzʔą̀·gò < ʔàzʔą́ + the subord. encl. -gò.

(4) ʔa-ni- . . . (y- pf.)-1-ʔą́ *to have one's own head inside,* lit. *to have one's own round object inside.* Neut. mediopass. ʔa- *off, into, out of sight* plus a prefix ni- (or ní-), used in all round object bases referring to the position or movement of the head. See nos. 9, 11–17.

(5) dàh- . . . (s- pf.)-zero-ʔą́ *round objetc lies on top.* Neut. intr.

(6) dàh-nà- . . . (s- pf.)-zero-ʔą́ *round objects lie about on top.* Neut. intr. Cf. nos. 5, 8.

(7) dì-di- . . . (y- pf.)-zero-ʔą́ *round object lies at, near the fire.* Neut. intr.

(8) nà- . . . (s- pf.)-zero-ʔą́ *round objects lie scattered about here and there.* Neut. intr.

(9) nà·-ní- . . . (s- pf.)-l-ʔą́ *to hold one's own head* (lit. *one's own round object*) *to a side.* Neut. mediopass. Cf. no. 4.

(10) ná·- . . . (s- pf.)-d-ʔą́ *another round object is in position, a round object is in position again.* Neut. intr. Cf. no. 1.

(11) O-ni- . . . (n- pf.)-l-ʔą́ *to have one's own head* (lit. *one's own round object*) *touching (it).* Neut. mediopass. Cf. no. 4.

(12) ní- . . . (s- pf.)-l-ʔą́ *to have one's own head* (lit. *one's own round object*) *in position.*

Neut. mediopass. Cf. no. 4. Note also: Oì·ʔ-ní- . . . (s- pf.)-l-ʔą́ *to have one's own head inside (it)*, e.g. *to wear a mask* and Oì·h-ní- . . . (s- pf.)-l-ʔą́ *to hold one's own head in (e.g. the rain)*.

(13) Kí-ní- . . . (s- pf.)-l-ʔą́ *to have one's own head thrown forward, stretched out.* Neut. mediopass. Cf. no. 4.

(14) yà-ni- . . . (y- pf.)-l-ʔą́ *to have one's own head thrown back, facing up.* Neut. mediopass. Cf. no. 4.

(15) yà·-ʔa-ni- . . . (y- pf.)-l-ʔą́ *to have one's own head hanging down.* Neut. mediopass. Cf. no. 4.

(16) yàh-ʔa-ni- . . . (y- pf.)-l-ʔą́ *to have one's own head sticking in (e.g. at a window).* Neut. mediopass. Cf. 4, 12.

(17) ha-ni- . . . (y- pf.)-l-ʔą́ *to have one's own head sticking out (e.g. of a window).* Neut. mediopass. Cf. 4.

Active bases.

Nos. 18–29, in addition to other prefixes, all have the indefinite pronoun prefix ʔa- referring to the sun. All are intransitive. See no. 3.

(18) ʔa-ʔa- . . . (y- pf.)-zero-mom. *the sun sets, moves out of sight; the day passes.*

(19) ʔa-ná·-ʔa- . . . (y- pf.)-d-mom. *the sun again sets, another day passes.* Cf. no. 18.

(20) ʔa- . . . (n- ipf., n- pf.)-zero-mom. *the sun moves, time passes.*

(21) ʔa-di . . . (s- pf.)-zero-mom. *the sun begins to move, time begins to pass.*

(22) dàh-ʔa-di- . . . (y- ipf., y- pf.)-zero-mom. *the sun starts upward.*

(23) O-tà·-ʔa- . . . (s- pf.)-zero-dist. *the sun travels among (e.g. clouds).*

(24) nà-ʔa- . . . (s- pf.)-zero-dist. *the sun travels about here and there.*

(25) nì-ʔa- . . . (n- ipf., n- pf.)-zero-mom. *the sun moves to a fixed point, the appointed time approaches.*

(26) yà·-ʔa-di- . . . (s- pf.)-zero-mom. *the sun begins to set, afternoon approaches.*

(27) ha-ʔa- . . . (y- pf.)-zero-mom. *the sun rises, emerges (from behind the horizon).*

(28) ha-ná·-ʔa- . . . (y- pf.)-d-mom. *the sun again arises, another day dawns.* Cf. nos. 18, 19.

(29) O-γá-ʔa-yi-(< *γʷe-) . . . (s- pf.)-zero-mom. *the sun moves past (it), beyond (it).*

Nos. 30–74 illustrate a variety of prefixes and all refer to the handling of a round object. All of them are transitive unless otherwise noted. Note, in some of these, the wide divergence between literal and idiomatic meanings; see especially nos. 33, 35, 41, 45, 46, 51, 56, 65, 71.

(30) . . . (n- ipf., n- pf.)-zero-mom. *to carry a round object.*

(31) Oà-ʔa- . . . (n- ipf., n- pf.)-zero-mom. *to lend a round object to (him).*

(32) Oà·- . . . (n- ipf., n- pf.)-zero-mom. *to give a round object to (him)*, lit. *to cause a round object to move to (him).* Cf. 31.

(33) Oà·-dì- . . . (y- ipf., y- pf.)-zero-mom. *to take a round object off of (it)* (e.g. *to slip a ring off his finger*). Note the variant with ʔa- indef. pronoun and -d- classifier: Oà·-ʔa-dì- . . . (y- ipf., y- pf.) -d-mom. *a shinny game is lost from (him)*, lit. *a certain round object is moved off of (him).* Pass.

(34) Oí-yì- . . . (y- pf.)-zero-mom. *to carry a round object up along the side (e.g. of a hill).*

(35) Oí-ho-hi- . . . (ipf. only)-zero-con. *to keep bothering (him)*, lit. *to try to move a round object against (him)* (?).

(36) ʔa- . . . (y- ipf., y- pf.)-zero-mom. *to carry a round object off, away, out of sight.* Cf. no. 18.

(37) ʔa-di-ni- . . . (y- pf.)-d-mom. *to put a round object in and not be able to get it out, to get a round object stuck in.*

(38) ʔą́·-di- . . . (n- ipf., n- pf.)-zero-mom. *to take a round object off from an opening; to take off a stopper, lid.*

(39) ʔàł-čá- . . . (n- ipf., n- pf.)-zero-mom. *to take a round object apart.*

(40) dá-di- . . . (n- ipf., n- pf.)-zero-mom. *to put a round object in an opening to block it; to put in a stopper, plug.*

(41) dàh- . . . (y- ipf., y- pf.)-zero-mom.

to put a round object on top, to hold a round object up. Cf. 5. Cf. also the variant: ʔád-ą́·h-dàh-ho- . . . (s- pf.)-d-mom. *to commit a fault on oneself*, lit. *on oneself* (ʔád-ą́·h), *to put the matter* (symb. by ho- place-time obj.) *on top.*

(42) dàh- . . . (y- ipf. only)-zero-con. *to try repeatedly to force one's way with a round object.* Cf. 41; the structural difference here lies solely in the stem configuration employed.

(43) dàh-dì- . . . (y- ipf., y- pf.)-zero-mom. *to start off with a round object, to lift up a round object.* Cf. no. 33.

(44) dàh-hì-dì- . . . (y- ipf., y- pf.)-zero-mom. *to hang up a round object, to suspend a round object.*

(45) O-dá·h- . . . (n- ipf., n- pf.)-zero-mom. *to go to meet (him) with a round object, to greet (him) with a message.*

(46) di- . . . (s- pf.)-zero-mom. *to begin to carry a round object, to decide (to give) a ceremony.*

(47) dì-di- . . . (y- pf.)-zero-mom. *to put a round object at the fire (so that it may be heated).*

(48) tá-di- . . . (y- pf.)-zero-div. *to take a round object to different places.*

(49) O-t'a- . . . (y- ipf., y- pf.)-zero-mom. *to place a round object under (his) garments.*

(50) na- . . . (y- ipf., y- pf.)-zero-mom. *to lift a round object down.*

(51) nà- . . . (y- ipf., s- pf.)-zero-cont. *to carry a round object about, to be carrying a round object here and there.* Note also: nà-ho- . . . (s- pf.)-zero-cont. *to make plans* lit. *to move space-time* (symb. by ho- place-time object pronoun) *here and there.*

(52) nà-dì- . . . (y- ipf., y- pf.)-zero-mom. *to take a round object down from an elevation* (e.g. *to pick fruit from a tree*).

(53) ná- . . . (n- ipf., n- pf.)-zero-mom. *to return with a round object, to carry a round object back.*

(54) ná-dì- . . . (y- ipf., y- pf.)-zero-mom. *to pick up a round object, to choose, select a round object.* Note that the di- of this combination appears to occur also in nos. 22, 33, 43, 44, 52.

(55) ná-hi- . . . (s- pf.)-zero-rev. *to turn a round object over.*

(56) nì- . . . (n- ipf., n- pf.)-zero-mom. *to put, place, set a round object down*, lit. *to cause a round object to move to a stop.* Cf. no. 25. Note the variants: O-ɬ-nì- . . . (n- ipf., n- pf.)-zero-mom. *to beat (him) in the moccasin game*, lit. *to put a round object down with (him)*; nì-ho- . . . (n- ipf., n- pf.)-zero-mom. *to set a date, to make a decision*, lit. *to put a place-time down*; Oè·-nì-ho- . . . (n- ipf., n- pf.)-zero-mom. *to decide upon (it), to make a rule, law about (it)*, lit. *to put a place-time down about (it).*

(57) nì-di- . . . (n- ipf., n- pf.)-d-mom. *to set a round object aside for oneself, to put a round object down for oneself.* Cf. no. 56.

(58) nì-ki-dì- . . . (y- ipf., y- pf.)-zero-mom. *to begin to carry a round object here and there.* Cf. 54.

(59) O-nì·-ki-di- . . . (y- pf.)-zero-mom. *to put a round object over (his) face* (e.g. *to put a mask over his face*).

(60) O-ki- . . . (y- ipf., y- pf.)-zero-mom. *to take a round object off of (it)* (e.g. *to take off someone's mask*). Cf. no. 59.

(61) yà-yì- . . . (y- pf.)-zero-mom. *to empty (e.g. water from bucket)*, lit. *to throw a round object down.*

(62) yàh-ʔa- . . . (y- ipf., y- pf.)-zero-mom. *to carry, bring a round object into (e.g. a house).*

(63) yì- . . . (y- ipf., y- pf.)-zero-trans. *round object comes into being, moves into position.* Act. intr. See **6** (e).

(64) yó·-ʔa- . . . (y- ipf., y- pf.)-zero-mom. *to put a round object away, out of sight.*

(65) yó·-ʔa-di- . . . (y- pf.)-zero-mom. *to put a round object aside; to abjure, give up (e.g. bad habits, former ways).*

(66) ha- . . . (y- ipf., y- pf.)-zero-mom. *to take a round object out (of an enclosed space.).*

(67) ha- . . . (y- ipf., s- p)-zero-mom. *to take a round object up (e.g. up a hill).* Cf.

no. 66; the structural difference lies solely in the pf. paradigm required.

(68) ha-dì- . . . (y- ipf., y- pf.) -zero-mom. *to take a round object off*. Cf. no. 54. Our gloss for no. 68 is insufficient; should read, perhaps: *to cause a round object to move, slip out (of an enclosed space)*. Cf. nos. 54, 66.

(69) O-yà- . . . (n- ipf., n- pf.)-d-mom. *to take a round object away from (him)*. Note: ʔàɬ-yà-dà- . . . (y- ipf., s- pf.)-d-mom. *several play football*, lit. *several take a round object away from each other*. ʔàɬ- recip. pronoun; dà- distributive prefix.

(70) ʒí-ʒa- . . . (y- ipf., y- pf.)-zero-mom. *to put a round object into the fire (in order to burn it)*. Cf. 47.

(71) ǰí- . . . (n- ipf., n- pf.)-zero-mom. *to take a round object out (e.g. of the house); to tell (it), make (it) known*. Note: ǰí-ho- . . . (n- ipf., n- pf.)-zero-mom. *to tell of, make known an event or occurrence*. ho- place-time object.

(72) ǰí-dà- . . . (y- ipf., y- pf.)-zero-dist. *to tell the main or several parts of (e.g. a story), to give information on certain parts of (it)*.

(73) ǰí-ná·-hi- . . . (s- pf.)-zero-mom. *to again tell (things) one after another*.

(74) O-ɬ-nì-hi- . . . (s- pf.)-ɖ- *the moccasin game is continually lost by (him)*, lit. *the round object is continually moved with (him)*. Pass.

Nos. 75–88 always contain the prefix ni- and the classifier -d-, and refer to the movements of one's own head. All of them are mediopassive. Cf. nos. 4, 9, 11–17.

(75) Oi̇·h-ni- . . . (y- pf.)-d-mom. *to put one's own head in (it)*. Cf. no. 12.

(76) ʔa-ni- . . . (y- pf.)-d-mom. *to put one's own head in (e.g. in the rain)*. Cf. nos. 4, 18, 36.

(77) dàh-di-ni-yi- . . . (y- pf.)-d-mom. *to lift, raise one's own head*.

(78) dàh-ni- . . . (prog. only)-d-mom. *to go along holding up one's own head*.

(79) O-di-ni-yi- . . . (y- pf.)-d-mom. *to put one's head to, against (it)*. Cf. no. 77.

(80) nà-ni- . . . (s- pf.)-d-cont. *to move one's own head about*. Cf. nos. 8, 24, 51.

(81) nà·-ná-ni- . . . (prog. only)-d-mom. *to move one's own head around*.

(82) O-ni- . . . (n- ipf., n- pf.)-d-mom. *to touch (it) with one's own head, to put one's own head to (it)*.

(83) nì-ni- . . . (n- ipf., n- pf.)-d-mom. *to put one's own head down (there)*, lit. *to cause one's own round object to move to a stop*. Cf. nos. 25, 56.

(84) ha-ni- . . . (y- pf.)-d-mom. *to put one's own head out (of an enclosed space)*. Cf. no. 66.

(85) ǩí-ni- . . . (s- pf.)-d-mom. *to stick out one's own head, to throw one's own head forward*. Cf. no. 13.

(86) yà-ni-yì- . . . (y- pf.)-d-mom. *to throw one's own head back*. Cf. no. 14.

(87) yà·-ʔa-ni- . . . (y- pf.)-d-mom. *to hang one's own head down*. Cf. no. 15.

(88) O-zà-ni- . . . (y- pf.)-d-mom. *to kiss (him), to put one's own head to (his) mouth*.

Nos. 89–100 all contain the prefix di- and refer to the handling of words or a song.

(89) Oà-ʔa-di- . . . (n- ipf., n- pf.)-zero-mom. *to give the word to (him), to give consent to (him), to let (him) have his own way*. Cf. no. 31.

(90) Oà·-di- . . . (n- ipf., n- pf.)-zero-mom. *to hand a round object to (him) in words, to give a promise to (him), to offer forgiveness to (him)*. Cf. nos. 32, 89.

(91) ʔá-ǩi-di- . . . (y- ipf., y- pf.)-d-mom. *to make a false claim, to claim in speech what is not true*, lit. *to handle words on oneself* (?).

(92) di- . . . (n- ipf., n- pf.)-zero-mom. *to arrive singing, to go along singing*, lit. *to carry words, a song*. Cf. no. 30.

(93) di-di- . . . (s- pf.)-zero-mom. *to begin to sing*, lit., *to begin to carry a song*. Cf. no. 46.

(94) nà-di- . . . (s- pf.)-zero-dist. *to go from place to place singing*, lit., *to carry a song from place to place*. Cf. no. 24.

(95) nì-di- . . . (n- ipf., n- pf.)-zero-mom. *to finish singing a song*, lit. *to come to a stop with a song*. Cf. nos. 25, 56, 83.

(96) nì-ná-di- . . . (n- ipf., n- pf.)-zero-mom. *to finally give in after urging, to*

promise to release (it), lit. *to put the word back down again*. Cf. 95. ná- *back (to original position)*.

(97) nì-hi-di- . . . (s- pf.)-zero-mom. *to sing songs one after another*, lit. *to put songs down one after another*.

(98) ha-di- . . . (y- pf.)-zero-mom. *to sing a song*, lit., *to move a song out (of an enclosed space)*. Cf. nos. 66, 84.

(99) ɣà-ʔa-di- . . . (n- ipf., n- pf.)-d-mom. *to win an argument*, lit. *to take words away*. Cf. no. 69.

(100) O-čá-di- . . . (n- ipf., n- pf.)-zero-mom. *to take (it) from (him) by command, to take (e.g. restrictions, bad behavior) from (him) by word*.

9. Since this is the final paper of my series on the Apachean verb, it may be useful to summarize briefly the major points of our analysis. The Apachean verb is made up of elements or structures which we may classify in three groups as follows:

I. Themes, which consist of an invariable prefix (often zero) plus one or more stem configurations. Most themes function solely as bound forms (see the examples given in **7** of this paper) but we occasionally find one in which the prefix plus one stem may function as a free form, but as a noun, not as a verb. Thus, for example, the noun theme bà·ʔ *war* is obviously a part of the verb theme -bá·h (mom. ipf.), -bà·h (cont. ipf.), -bà·ʔ, -bàh, -bàh, -bá·h *to go to war, to go on a raid*. Similar examples are found in bą̀s *wheel, hoop* and -bą̀s *to be hoop-like*, -bà·s, -bą̀·z, -bą̀s, -bą̀s *to roll a hoop-like object;* dą̀· *spring (season)* and -dą̀·, -dą̀·, -dą̀·ɬ, -dą̀·h, -dą̀·ɬ *spring approaches*; yátîʔ *talk, conversation* and yá- . . . -tìʔ, -tìʔ, -tìh, -tį̀h, -tĩh *talking goes on, takes place*; tĩn *ice* and -tĩn, -tĩn, -tį́·ɬ, -tį́·h *to freeze*; -tàʔ (must be preceded by a poss. pronoun), ťá- (in compounds) *feather* and -ťá, -ťą̀, -ťá·ɬ, -ťá·h, -ťá·ɬ *to feather an arrow*; ťè·š *charcoal* and -ťè·š, -ťé·ž, -ťĩš, -ťĩš, -ťè·š *to blacken (as with charcoal)* náťóh *tobacco* and ná- . . . -ťó·h, -ťòh, -ťòh, -ťòh, -ťó·h *to smoke (e.g. a cigarette)*.

II. Prefix complexes, one or more adverbial prefixes which, as we have seen, govern the imperfective and perfective paradigms in which the active bases to which they belong must be conjugated. Examples of prefix complexes have been given in **8** of this paper. Note that some individual prefixes may occur in many complexes.

Prefix complexes are always bound forms but it occasionally happens that free forms are incorporated into a prefix complex. In such cases, however, the incorporated free form often appears in a special combining form. Examples follow: ʔé·h- . . . (y- ipf., y- pf.) *into clothing*, cf. ʔé·ʔ *clothing*; dį́· . . . (ipf. neut.) *four*, cf. dį́·ʔ *four*; tá- *water* in tá-na- . . . (s- pf.) and tà·h- . . . (y- ipf., y- pf.) *into the water*, cf. tó *water* which has also a form tá- in certain compounds; tá- . . . (ipf. neut.) *three*, cf. tá·ʔ *three*; O-tà·- . . . (y- ipf., s- pf.) *among (them)*, cf. -tàh (must be preceded by poss. pronoun) *among*; yà·- in yà·-yì- . . . (y- ipf., y- pf.) *getting to be down*, cf. -yà· (with required poss. prefix) *down*; O-zà- . . . (y- ipf., y- pf.) *in one's mouth*, cf. -zàʔ (with required poss. prefix), -zá- (in compounds) *mouth*.

III. Paradigmatic prefixes, including classifiers, tense-modal prefixes, deictic prefixes, and subject, object, and indirect object pronouns. These have been described in the first three articles of this series (see footnote 1).

The verb base is constructed by combining one stem configuration belonging to a given theme with a prefix complex. Every verb base is neuter or active depending upon the stem configuration employed. Active bases may also be distinguished in respect to the several aspectival categories sometimes represented in the theme.

Verb bases may occur in one or more classes, as determined by the classifying prefix used in position 13. Neuter bases are conjugated in only one paradigm, selected from the imperfective, progressive, n-, h-,

and s- perfective. Active bases must be conjugated in seven tense-modal paradigms.

In analyzing any given verb construction, then, we may refer each of its morphemes to one or other of the categories listed above. Taking the form bà·ȟš?à·h *I give a round object to him* as an example, we may divide it as follows; bi-à·-ni-š-?à·h. The base is Oà·-. . . . (n- ipf., n- pf.)-zero- plus the momentaneous stem configuration of the round object theme, in this form represented by -?à·h, the imperfective stem. à·-, the postposition *to, from* is the adverbial prefix complex, here requiring the n- ipf. and the n- pf. bi- *him* (indirect obj.), ni-, ipf. prefix, and š-, first person subject are paradigmatic prefixes. The classifier and third person object are represented by zero morphemes. Literal meaning in terms of this analysis: *I cause a round object to move to him.*

SENECA I

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1. Introduction
2. Text with interlinear translation
3. Sectional translation
4. Alphabetic list of words with translation
5. Morpheme list

1. This paper will, it is hoped, be the first of a series of papers devoted to Seneca phonology, morphology, and syntax, not necessarily by the same authors. The plan, if it is followed, will provide cumulative data on Seneca. For example, we (or others interested in Seneca) may present another text with lists of words and morphemes after the manner of the present paper. Then, in addition to internal references within such a Seneca II paper, references may also be made to the words and morphemes listed in this Seneca I paper. Or, to envisage another possibility, we (or others, with greater command of the Seneca lexicon) may provide attestation for the meaning of Seneca morphemes which we list here without direct translation. Other possibilities exist, including a formal statement of Seneca phonemes, preliminary statements on Seneca syntax, and, in general, addenda and corrigenda to the morphological listing attempted here. In short, this paper provides data on Seneca morphemes in lists which are readily extensible either from further field work or from further study of texts already gathered. The preliminary notation adopted for this paper, with an indication of phonetic range, is as follows:

/t/: [t], [d]
/k/: [k], [g]
/ʔ/: [ʔ], [ˈʔ]
s/: [s], [sˑ], [z]
/š/: [š]
/č/: [č], [j]
/n/: [n], [ɲ]
/h/: [h], [x], [ʰ]
/w/: [w], [β], [u]
/y/: [y], [i], [ʸ]
/i/: [i]
/e/: [ɛ], [æ]
/o/: [o], [ɔ]
/a/: [ɑ], [a], [ʌ]
/ˑ/: [ˑ], [ˑə] (after vowels)
/◌̣/: (under vowels: i̯, e̯, and so on; also nasalized vowel plus nasal consonant homorganic to following stop. In some instances, glottal stop appears between nasalized vowel and homorganic nasal; Preston tended to hear [ə̯] after the glottal stop where Voegelin heard homorganic nasal: onón[ǫʔə̯]táʔ beside onón[ǫʔn]táʔ for phonemic ononǫʔtaʔ).

The present paper gives a text dictated by Chauncy Johnny John,[1] one experimental type of translation as well as an interlinear translation, and two major lists of morphemes: one in the juncture bound sequences of words, with translation; the other in terms of substitutability of morphemes, without direct translation.

The Seneca word may be defined in relation to techniques of form elicitation: (1) the segment of utterance pronounced between pauses in very slow dictation with the informant being asked to repeat each such segment two or three times to check recording accuracy. Word boundaries so established are constantly corrected by observed analogies as the work progresses. Another definition of the Seneca word is possible, namely: (2) the minimal form extractable

[1] Of the Allegany Seneca Reservation, Quaker Bridge, New York. Some of the attesting sequences which figure in 5 derive from Charley Butler, also of the Allegany Reservation.

from the continuum for which the informant can supply a unit meaning. A combination of the two definitions given above includes all the techniques employed in getting the Seneca text presented in this paper. Thus, the Seneca word is a minimal speech segment which the informant quotes between pauses and for which he supplies a unit meaning. It should be emphasized that either of the two definitions may be employed exclusively.

2. The text given here was obtained from the informant mentioned above; we asked him to speak slowly enough to allow us to write while he talked. In response to quite general directions, and after a few weeks experience in dictating shorter texts, the informant began dictating this text word by word. There were pauses between words to begin with but after the first few sections, the informant spoke in short phrases, often with long pauses between phrases to allow us to catch up to him; for the second half of the text, the informant spoke quite rapidly, with ambiguous pauses. That is to say, it was difficult to say whether the pauses reflected phrase markers in normal Seneca style or the informant's occasional consideration of our difficulties in keeping pace in dictation which worsened toward the end of the text. Our record of pauses in transcription is accordingly ambiguous also, and of little value for the interpretation of Seneca phrases. Subsequently, the informant repeated the text twice while we made two series of phonograph records: one spoken at a speed which a raconteur might follow when facing an audience, the other at reduced speed more or less comparable to the speed of the text given while we transcribed. Our subsequent remarks relate only to the text as recorded by us from the informant's dictation; we regard the comparison of our transcribed version and the versions contained on the phonograph records as a separate problem to which a later study may be devoted.

Having written down the text, we read our writing back to the informant to obtain a sectional translation. To obtain this it was necessary to divide the text into sections; we felt encouraged in thinking that a native speaker might divide his own transcribed narrative into paragraph-like sections because another Seneca speaker had already succeeded in doing this for us. We would read back the text as given, and ask the informant to signal for halting, after we had read a section of the text which he could translate or interpret as a unit.

Each time the informant gave us the signal to halt, we asked him to tell us in English the meaning of the part which we had just read in Seneca. This procedure was followed for the entire text: the sections as numbered both in the text, and in the informant's statements of what each section means, represent, therefore, divisions made by the raconteur rather than by the linguist (**3,** below, gives informant's translation).

After the informant translated, or rather, served as interpreter for the text, section by section, we again read the text to him. In this rereading, we halted after every word and asked for the meaning of that word. If the informant gave an English equivalent, we would write the English word under the Seneca word; by this and other devices (**4** and **5,** below), we finally obtained an interlinear translation for our manuscript. This interlinear translation is given here in linear form, following the text section to which it relates. If more than one English word is required to translate a single Seneca word, the English words are joined by hyphens. The spaces between Seneca words and English words (including hyphenated words) below are accordingly the same. The sense of the interlinear translation and the informant's sectional translation under **3** is closely similar; for a few sections, the interlinear gives more detail than the corresponding sectional translation, and some sectional translations appear to anticipate

or recapitulate details from adjacent sections.[2]

1. ó?nehčí? hatínǫkék ǫ·kwéhǫ·wéh áhsǫ́? té?kánǫ·kék né·? kanyó·? né?shǫ·kę́·s hénǫhé·ihkǫ́? onę́hsá? yoę́ntakǫ́·ǫ? kanǫ́·kék kanyó·? onónǫ?tá? [*long-ago in-village Indian more there-wasn't-any the game just to-live-on mushroom in-the-ground there-is wild potato*] 2. o·yá·?khó? kanyó·? osáe?ta? ta·né·i?kę·s hénǫhé·ihkǫ́? tá· ó·ne wa·ę́? néh howǫ́hse·nǫ́? ná·tinǫké? eyǫ́kwaye·í? ękwá·o·wí? nénа?ót o?kę·nekwę?s?á·? [*another-also wild beans now what-they-used-to-live-on now now he-said the their-own-chief the-town we'll-have-a-meeting I'll-tell what he-made-up-his-mind*] 3. to·kés wáotí·ye·í? wá·ko·wí? nehǫ́·kwe·i?ta? ętwáhte·ntí? kanyó?shǫ́?ǫ? sǫ́·ká· eyokayę́? ęǫ́hte·nti? [*true they-come-together he-told-them his-people we-will-go anybody some willing he-may-go*] 4. hǫ·wéh hęntwé·i? hatínǫkék ǫ·kwéhǫ·wéh oya·tá? nó·nǫ́ęčo·?té? eyéthiyá?węthó? [*over-there where-we-go in-village Indian Cherokee nation we'll-kill-them*] 5. kanyó·? henętwakwe·iní? wá·ęnǫ́hte·ntí? né?hó· wa·ené·i? héthatínǫké? oyá·tá? no·nǫ́ęčo·?té? ǫ·kwéhǫ·wéh ó·thenǫ́tate·iké? wáenǫti·yó? [*anybody all-we-can they-started-to-go-now where they-go where-they-live Cherokee nation Indian (?) (?)*] 6. tá· ne?hó· niyáwę?ǫh shayá?tá·t háhsenó·wa·néh wá·wǫnyó? o?thowenǫ́ęk hǫsa·tiyá·? neh onǫ́·ę? honǫhtę·čyó·ná·e sha?ka·t hé·né·i? hayá?tí· khahátakǫ· kęǫtak?ah hayashé·? [*now there that's-what-happened one-man big-chief kill-him scalp-him they-took-him-back the his-scalp they-went same he-was-with-them alone in-the-woods next-to-the-log where-he-lay*] 7. tá·né?ho? wa·ayǫ́? nyakwá·é? othwas?á·? wa·čyeǫkwáshǫ· hayáshé·? né·? ǫ́·kwéh wá·ktanyǫ́· to·kés ǫ·kweh hayáshé·? [*now-there he-got-there bear young-one he-noticed-it lying the man he-feels-around true man lying*] 8. sahte·ntí? nyakwá·e? o?shako·wí? honó?ęh wa·ę́? ó?ke·ikę́? hayáshé·? a·yę́·? ǫ́·kweh [*he-went-home bear he-told-her his-mother he-said I-saw-somebody he-is-lying I-thought person*] 9. tá· o·néh wa?a·ké? honó?ęh ne?hó· hinčí·hne·i? ęškǫ·wotha?s ho?shákо·?á·? né?ho· [*now now she-said his-mother where we'll-go-there show-me he-took-her-along there*] 10. hǫsa·né·i? hethayashę·? wa·ni·yǫ́? o·ne hae?kwah wá·?ektanyǫ́· wa?a·ké? ǫ·kwehwa·e ó?čyako·é·it wa·yǫ́? néoké? waǫwo·wí? wa?a·ké? sǫ·ka· hayáshé·? hǫ́·?wih ęhsatkahtǫ? [*they-went where-he's-lying they-arrived now(?) she-felt-around she-said a-man-I-think she-hollered he-came deer she-told-him she-said somebody lying over-there go-look*] 11. atí?kwaní·s ęhse·í? nénа?ót ta· ne?ho· hosa·yené·i? héthayáshé·? wa·tkathǫ́? háe?kwáh ne? haé?kwah wa·ę́? ǫ·kwéhwa· ékayá·sǫ́? [*what-you-think you what-it-is now there they-went where-he's-lying he-looks (?) the (?) he-said a-man-I-think he's-called*] 12. hękhe·nǫ·khǫ́·? tewǫ́khe·ít he·itkę́? wa·é? he·itkęta·ti? onǫ́taté? he·itkę́? wa·tatę́? o?thó·é·it wa·ę́? kaonǫtá·swé·i? [*I'm-going-to-call-them I-holler up-high he-said up-high on-the-hill up-high he-got-up he-hollered he-said you-better-come-here*] 13. kanyo?shǫ?ǫ? tashéswasnye·í? sǫ·ka· hayáshé·? o?ké·s?áh o?wahsawę́? wa·tiyǫ́·nǫ́? [*game he-took-care-of-him somebody he's-lying in-the-evening he-began they-got-there*] 14. hotkaye·í? wo·nǫtka?té? ó·ne ne?hó· wá·ene·í? héthayashę́? wáǫwaha·t shaya?ta·t tha·yo·níh ó·nowa·é? hono?ę·?keh to·wonǫ·ęhkwęh [*at-dusk they-came now where they-went where-he-lay he-told-him only-one wolf he-will-clean-it-off his-head his-scalp*] 15. ta?a·yę?he·it wá·sho?kó?ké·s haska·ne·is ne?a·ák wo·wǫ́ęstę́? né?hésho·ní·s wa·ę́? o·yá?ne·iwá? [*he-can't-do-a-good-job he-bites-it he-wants eat-it he-stopped-him that's-enough he-said I'll-get-another-person*] 16.

[2] Other versions of this narrative are: J. Curtin and J. N. B. Hewitt, Seneca Fiction, Legends, and Myths, BAE-R 32, Washington, 1918, pp. 273–6, no. 53: The Story of Bloody Hand; A. C. Parker, Seneca Myths and Folk Tales, Buffalo Historical Society Publications 27, Buffalo, 1923, pp. 386–93 no. 69: Origin of the Charm Holders' Medicine Society. Neither of these variants contains the origin of hunting motif. Curtin-Hewitt pp. 98–102, no. 8 has some motifs in common and ibid. pp. 139–44, no. 22 (e.g.) includes a similar bird-singing motif.

sa·ǫwaháte ęǫtawa·ę́? wa·ę́? éšnowáe?čih i·sna·e te·išešnye·i? hi·kę· nayashę́·? ne?ka·e?yo·níh i·s te·išešnyé·i? ǫ·kwehikhá·? nihše?eó?tę́· [*different-one he-will-wash-it-out he-said make-it-good it's-you you-take-care-of-him yonder he-lies that's-the-reason you you-take-care-of-him that-person you-can-handle-it-better*] 17. wa·čye·no·ktę́? wa·ę́? kaonǫ·ta·sé·i? káhkako·wá· i·s okwé·inyǫ·n hé?tkęhhehsne·i? wa·ni·yǫ́? ęčišnikwa·á? nehǫ·wé? onǫ·é? [*when-he-finished-cleaning-it he-said you-come-here buzzards you a-place up-high you-can-fly they-come you-can-get-it over-there his-scalp*] 18. he·?itkę́? čyǫčyęhtǫ́? ne?hotkani·yǫ· kanyo·? tentišni·ya·wí? tǫtišnye?tǫ·tí? eyá·kwéh tǫtá·niya·wí? nehǫ·weh onǫ́·e? sa·ni·yǫ́? to·kes šhi·ya·wí? ta·ǫwayǫ? henyakwa·e? ęsnowa·é? ewí·yoá·k ęčyitwasho·ní? [*up-high first-one there-it's-hanging-up anybody you-bring-it they-crow we-think they-got-it it-belongs-to-him his-scalp they-got-back true they-got-it he-gives-it-to-him bear he'll-wash-it clean-him-good they'll-put-it-back-on*] 19. wa·čyé·no·ktę́? wa·ę́? e·inǫkhá? ętha·wí? onǫhkwa?shę́? né?hó· a·é? hǫsa·yé·i? čyonǫ·taté? o?tho·e·it [*when-he-finished-cleaning-it he-said he's-going-after-him he-brings medicine there again he's-gone to-the-hill he-hollered*] 20. wa·ę́? kaonǫta·se·í? shata?ké·i?a· šya·sǫ́? ę́cha·wí? onǫhkwa?shę́? ęǫčyé·?tak hayáshę́·? ta· o?yánishét o·neh wa·ę wa·ayǫ́? [*he-said you-come-here Cloud-Eagle your-name bring medicine you-use-it he's-lying now it-took-long-time now he-said he-got-there*] 21. wa·ę́ hǫ?kwe·nǫ·k ehsnǫhkwa?šyonyé? neyi?kę́·? hayáshę·? to·kes wa·wǫ·yǫ́? onǫhkwa?shé? [*he-said we'll-call-you you-will-make-medicine-for-him that-person is-lying-down true he-gave-it-to-him medicine*] 22. há?tewe·inishę· ayę·? sá·ayé? ta·o·néh hothǫ·té? ká·weti?kwah hónǫte·no·t tá·o·néh na·é sa·čyę́·? [*it's-noon I-thought he-woke-up now he-heard-it where they-are-singing now* (?) *he-sits-up*] 23. o?thatkathǫ́? ne·kwaneh ha?kwisté? weni·?čyǫ́? tá·yente·í? hóthǫ·té? wá·šnyot ayę·? ne?nǫ́· hahséno·wa·neh [*he's-looking-around where-he-was something sitting-around he-does-not-know-what-it-is he-heard-it he-talked-to-him he-thought that big-chief*] 24. kanyo?shǫ́?ǫ́ o·neh wáǫwǫ·tǫ́· atí?kwa sa·tǫkwe·í? wa·ę́? né?honó· ha·tikaye·í? ęhskáhte·ntí? [*all-kinds-of-game now he-asked-him how-he-is he's-getting-better he-said I-guess good-enough I-can-go-home*] 25. ne?ho· hęske·í? hetwakáhtenčyǫ́· eskahte·nti? ha·tha·e?ne? heniwe·nishe·is wa?o?kę·? kęǫtayę́? kowa·néh teyóswe·nté? wa·ę́? né?ho· wí·yó· ękéno?e·it [*there back-where-I-was where-I-come-from I'll-go-home he's-walking-slowly all-day when-night-comes tree-is-lying-down big-one it's-hollow he-said there it's-fine I'll-stay-overnight*] 26. eyo·hę́? ta·o·neh teskatha·k wa·ačyé· wa·tǫ́ęshę́·? wa·áčhé? čo?či? o?yanishet hayáshę·? né?hó· kęǫtak?ah hanyošyo·t wa·čę·kwashǫ́· wa·ayǫ́? nǫ·kweh [*tomorrow now I'll-take-another-walk he-sat-down he-took-a-rest he's-tired for-a-long-time too-long he-lay-down there beside-the-log he-sat-down he-saw he-came man*] 27. ta·o·neh wa·ę́? ha?kwisté? khawí? ne?ęhse·ik tá·wayǫ́? ne?ęhse·ik wa·ę́? né? hǫ·kweh ta·neh wa·ę́? ka·we nǫta·se·i? waǫwǫ·tǫ· hé?ę te?wiye? wa·ę́? ne?ho·na·e čyákwónǫké? té?we·yé·? si·wǫkhánǫ·ké·s hatínǫké? ne·nǫ·kweh nye·no?s?a·? [*now he-said something I-brought what-you-will-eat he-gave-it-to-him what-you-will-eat he-said the man now he-said where do-you-come-from he-asked-him no not-so-far he-said there where-we-live not-so-far he-heard-it where-he-lived the-people dwarves*][3] 28. ó?nehčí? na·e čhiyákwanǫké? kato·kę·shǫ́· hé·ǫ·wéh ta·to·kes wá·tekho·ni? wa·k kanyó·? ónonǫ̨?ta? né·khonéh kanyó·? osáe?ta? ta·neh honí·yǫ· ha·wi? [*long-ago* (?) *long-time-since-we-lived-here same-place over-there it's-true he-eats-it he-eats-it wild potatoes*

[3] It is not clear that this is an allusion to Seneca "little people" (the djogeon of Parker and Curtin-Hewitt). References are: Parker op. cit. pp. 18, 32–3, 331–3 (no. 52: A Tale of the Djogeon or Pygmies); Curtin-Hewitt op. cit. pp. 84–6 (no. 3: Djogeon (Dwarf-man) and His Uncle), 98–102 (no. 8), 172–6 (no. 33), 452–3 (no. 91: The Poor Hunter and Djogeon); R. J. Weitlaner, Seneca Tales and Beliefs, JAF 28.309–10 (1915); J. Witthoft and W. S. Hadlock, Cherokee-Iroquois Little People, JAF 59.413–22 (1946).

another-thing wild beans now that's-about-all what-he-brings] 29. hǫ́·kweh woya?taę?hé? wá·ayǫ́? hetiyóswé·nté? sá·ayé? hosa·ya·ké? o?thatkathǫ́? wa·kǫ·ké? tečá·ǫkwa·h nǫ?owaǫti? hetinyóšyo·t [*man when-he-himself-is-sitting-down he-comes in-its-hollow he-woke-up he-went-out he-looked-around he-saw-them on-both-sides on-sides they-are-sitting*] 30. hekęǫtayę́? né?ho· ha?non ata·šnyet shayá?ta·t ó·shǫknihá? wa·ę́? ne?ho· ho?šné·i? eshésnyatká·ę?ǫ́· heniwáhsǫ·ti·s ta?kwistę? tha·yawę́? se·nóna·é esahčyǫ́?k i·waye?néh ká·šyǫčé·thá? [*tree-lying-down there he-was-in to-speak-to-them one-man he-sent-them-to-stay-overnight he-said there you-better-go they're-going-to-watch-him all-night nothing it-did-not-happen don't be-scared I-am-the-one lion*] 31. ne?ǫkhi·ya·s o?kwa·kwa· ne?wá· tá·šnyot wa·ę́? sasáčyashę́·?shǫ́· ne·ta?a·ǫ́ ta?kwistę́? náesayá?táwę́? ayákni?se·k na·e nekhó heniwáhsǫ·ti·s ha·wa·ye? ta·yakę? wa·čyę· ó?thákathǫ́? ne·tikátká?hó? té?sné?s né?tínyošyo·tak ta·o·náe? tosá·tha·k ne?ho· shǫ·khó hǫsa·ye·i? [*that's-what-they-call-us on-the-other-side side he-talked-to-him he-said lie-down-again I-can't nothing trouble-will-not-happen they-will-be-here* (?) *there all-night he-woke-up he-came-out he-sat-up he-looked-around nowhere they-are-not-there they-were-sitting-there again he-took-a-walk there where-they-came-from he-went-back*] 32. hénithoné·iuǫ́? wa?o?ké·? á·e? wa·aké? okwe·inyǫ·n é·no?e·it wa·tǫęshę·? a·e? wa?o?ké·? o·nae? wa·ayǫ́? wa·ę́? khawí? á·e? néhse·ik [*tracks-where-they-came-from in-the-evening again he-found a-place he-stays-overnight he-takes-a-rest again when-it's-night so-again he-came he-said I'll-bring again you-food*] 33. tá·ǫwayǫ́? ne?ęhse·ikhi·ké· wá·tkathǫ́? né?nih onęhsá? waté·iskǫ·ták ne?khawí? ta·ne·?wa·k hotǫęshé·? wa·khwę·tá? wá·?čyá?čyé·inin wa·tǫęshé·? wá·o·tá?tí? [*he-gave-it-to-him you-will-eat-that-one he-looks-at-him those mushroom they-roast-it that's-what-I-bring that's-what-he-ate he-rested when-he-got-through he-lay-down he-took-a-rest he-went-to-sleep*] 34. sa·ayé? o·nae? wa·kǫ·ké? tí·yoshé·i? waǫwǫ·tǫ́· o?šíwa·ę? tasaoweno?se·kǫ́? ę· wa·ę́? i·né?wá? tashǫknyate·nye·it wa·ę́? ne?ho· hó?šné·i? hi·kę· thotǫęshę·? ha·tha·e?né? eshišnyetka·ę?ǫ· [*he-woke-up again he-saw-them couple-of-fellows they-asked-him he-woke-up-again he-answered-him yes he-said I'm-the-one he-sent-us-up-here he-said there you-go yonder take-another-rest he's-walking you-watch-him*] 35. heniwáhsǫ·ti·s tá·šnye·it wa·ę́? sasačyashę·?shǫ· sačhęhtǫnǫ́· to·kes sačyashę́·? čę·kwáshǫ́· hóthǫ·té? sǫ·ka· hano·nka·h [*all-night he-makes-a-speech he-said you-better-lie-down-again you're-tired-I-guess true he-lay-down-again he-thought he-heard-it somebody he-is-whistling*] 36. katkáthó? wo?nikóey- -ntát he·itkę́? sa·?čiya·shǫ· o·ne·shothǫ·té? toskęh o·neh wa·aké? he·itkę? ne?ho· ka·t či?té?ǫ́· te·ówęto? teó·kę́? [*nowhere he-noticed-it up-high just-a-little-while he-heard-it-again closer now he-saw-them up-high there sitting bird never-before he-did-not-see-them-before*] 37. wa·ene·i? wa·aké? wahte·ntí? a·e? o·neh ha·tha·e?ne? a·e wa?o?kę·? wa·tǫęshę·? a·e? ne?ho· a·e? wa·ayǫ́? shaya?ta·tshǫ́? wa·ę? khawi? a·e? ęhsátekho·ní? ta·to·kes wa·tekho·ní? wa·khwę·ta? wa·etčyashę·? sa·aye? wa·kǫ·kę? ti·yoshe·i? wa·waǫtǫ·kho? a·e? wa·ę? o?sateshéhte·kó o·neh ta·šnye·it ę· wa·ę? [*they-went-again he-saw-it he-went again now he's-walking-slowly again when-it's-night he-took-a-rest again there again he-came same-one he-said bring-it again you'll-eat it's-true he-ate when-he-got-through he-lay-down he-woke-up he-saw-them two-fellows he-asked-them again he-said have-you-woke-up now he-answered yes he-said*] 38. shǫknyate·nyehto·nčye he?nǫta·ya·kwe·i? he·ǫ·weh ęhseno?e·it ehshihšnyatka·yǫ· wa·ę́ heniwáhsǫ·ti·s wa?o·hę·? o·thatha·k o?ke·s?ah a·e? wa·aké? hę·ǫ·weh e·no?e·it wa?o?ké·? wa·tǫęshé·? wa·čyę· [*he-sent-us-here where-we-came-from that's-where he-will-stay-overnight you-will-go-watch-him he-said all-night in-the-morning he-took-a-walk-again in-the-evening again he-found that's-where he-stays-overnight at-night he-took-a-rest he-sat-down*] 39. wa?o·hę·? o·neh o·thatha·k sahte·ntí? hǫsa·yǫ́? hethohtę·čyo· wa?o·hę·? wa·yǫ́? hehé?-

čyǫ́? káhseno·wa·néh [*in-the-morning now he-walked he-went-home he-got-home home next-morning he-came where-he-stayed his-chief*] 40. wa·ę? akí·way·ętači? héno?ǫ·wę? sakyé? o?ke·ikę́? onǫ́tka?té? kanyó· wa·ené? wa·ti·yǫ́? ta·o·neh wa·ę́? tashǫkwaté·nyé·it nikho·ne?í· eya?kwe?se·ik, [*he-said I-got-news what-happened I-woke-up I-saw-him a-lot-of-them game first one-that-comes now he-said he-sent-us-up-here we'll-be-there to-be-around*] 41. khahatakǫ· ne?kha·eyo·nis nekho wa?kwayǫ́? né?kyǫ?ǫ́? ęčyǫhe?kǫ·ǫk o·neh ta·ne?ho? nǫ?shǫkwayé·i? teyakwata-wenyé·i khahátakǫ·shǫ́·? [*in-the-woods that's-why there we-came-here we'll-be-with-you it-will-be-to-live-on now-there that's-why-he-created-us they-scatter-in-walking in-the-woods*] 42. ne·?čyočyęhtǫ́? ne? i· neokę́? né·khoném čoné·?tá? kaya·sǫ́? nyakwa·é? kwa?hó? oyéntaní? kaya·sǫ́? ne·khoném níkanyó?ta?s?a·á? okwe·inyǫ·n ęshǫhehkǫ·ǫk [*the-first-one that me deer another-one elk it's-called bear another-one moose that's-his-name another-one small-game a-place you-can-live-on-that-too*] 43. čyǫčyę?ǫhtǫ́? čone·iskyǫ·n kaya·sǫ́? tokta·kǫkhó? kwa?ayǫ· kaya·sǫ́? o·ya·?khó? thehto·ǫ́? kaya·sǫ́? ahsǫkhó? o·yá? čo?e·kah na·e kaya·sǫ́? i·sna·e senǫhtǫ́· ehse·i? ne? katowe·tha? [*first-one red-squirrel what-it's-called black-squirrel rabbit what-it's-called another-also ground-hog what-it's-called more-yet another raccoon (?) it's-called you you-select you the preference*] 44. ta·ne?honi·yǫ́· akwe·nǫ·n ęčǫhe?kǫ·k wa·ę? ewǫ́hsawę́? ętwatowe·hse·ik heni·yǫ́·? wa·ę́? ne? ęčyǫhe?kǫ·ǫk [*that's-about-all possible we-live-on-it he-said they-are-going-to-start hunting plenty he-said the it-will-be-to-live-on*] 45. wa·yo·?ktę́? wa·ę́? ne?honi·yǫ· aki·way-ętačyé? o·nentini eskahte·nti? ękhahatakǫ· hęske·i? i·wae? eyǫknithá·? neokę́? kaya·sǫ́? ta·o·neh sakahte·nti? na· ha·tekayé·i? [*it's-all-he-said he-said that's-about-all I-get-all-the-story that's-me I'll-go-home in-the-woods I'll-go it's-me-talking to-you deer it's-called now I-went-home this it's-the-end*].

3. Sectional translation. The translations recorded here represent literally what the informant said when he was interrogated according to the technique stated in **2**; this record has not been modified to make it fit the pattern of the interlinear translation.

1. long ago they had an Indian village, was no game at that time, they live on mushrooms and wild potatoes. 2. and the other one there was some wild beans, and the chief told them they're going to have a meeting, he is going to tell them he made up his mind. 3. he says we're going to have a meeting tomorrow to tell that I made up my mind to go somewhere so anybody who wants to go may go. 4. we will go to the next Indian village, we're going over there to kill them, the Cherokee. 5. he said the Indians were going up to the Cherokee nation and kill all they can. 6. what happened is a Seneca chief got scalped by the Cherokee who took his scalp, they went and put him down next to a log. 7. a little bear cub came and found somebody lying beside the log and went and felt around. 8. so he went home and saw his mother, he said I saw somebody lying over there, I thought it was somebody. 9. she said I'll go to look at what you found, so she went with the young one, they went over there where he lay, when they got there she looked and felt around and said it's true, somebody is lying there. 10. she told the deer there's somebody there lying at the side of the log, I want you to go look and see what you think about it. 11. now they start and go and look and show where he was lying, he said there is somebody lying there. 12. he went up the hill, I'm going to call all the animals to come here. 13. he did call them, he says he is coming towards evening, he is going to start to come. 14. now the time when a few came, that evening, they went there where he was lying, the chief said I'll let you clean him up on his scalp. 15. now he says I'm going to get somebody else because you like to bite it off, to eat that meat. 16. now he's got the

other—bear, I'll get you to clean him off good, you can handle him so long as you do a good job, you take care of him. 17. so he called two of them buzzards, he said I'll send you two to go get his scalp and bring it back, if you get it holler when you come back until you get here. 18. when they came they did holler so this man says they got it, when they brought it back they gave it to bear to clean up good so it can be put back on his head. 19. I have to go up on that mountain and come down there and bring some medicine so he can use it, this man here. 20. he says you come down, I mean you, Cloud Eagle, bring your medicine, take care of this man lying beside the old tree. 21. that's the reason we called you to come down, so we can use it for this man lying beside the old log so he may get better. 22. he woke up, and he heard somebody singing somewhere, he looked around, he can't see anybody but he heard it again singing, he sat up again. 23. now he sits up again, he looks around, there's lots of animals he never saw before, so one of them he speaks and says we got here where this man is lying, we'll help him to be all right again. 24. now he asks him how are you getting along, maybe he thinks it's getting better, it'll be all right to go back home. 25. now he says I have to go back the way I came from, then he started out, he went back towards his home, I've been walking all day long, towards evening he found an old tree lying on the ground, it's hollow, he thought that's a good place to stay over night. 26. a man came to where he was sitting beside the old tree. 27. so this man he brought something for him, he says I brought a little food for you so you can eat this, he ate it, he said maybe you heard of someone living close by where you're living, they call us little folks. 28. he brought wild potatoes and wild beans, he ate that, this man brought it for him and says we've been here a long time in this same place. 29. when this man came out of that hollow old tree he sat up and looked around and saw two men on both sides of the log. 30. now one fellow told him he sent us up here to stay tonight, we'll watch you all night so there won't be any trouble till next morning, they said don't be afraid of us, they call us Lion. 31. so he got ready and started again because he can tell which way they came when they were coming this way. 32. the same man he came, he brought something again, he gave him food, this man is going to eat that, he found a place again where he is going to stay over night. 33. now he looks at what this man brought, he brought some mushrooms for roasting, he ate that, when they got through he lay down to take a rest all night. 34. now this fellow sent us this way, he says he'll stay with you all night to watch so you wouldn't have trouble the next morning. 35. the other man said you better go back and lie down again, take a little more rest before you start again, so he heard somebody whistling somewhere. 36. then he heard it again somewhere, someone whistles, in a little while he heard it again closer to him, he saw a bird on a tree whistling, he never saw that before. 37. then he found another place to stay overnight, he sat down to rest, he sees a man coming, when he got over to where he is he told him he brought something to eat, when he was through he lay down to take a rest. 38. so the next morning he took a walk again the way towards his home, he found another good place to stay overnight, when he sat down he saw this man again, he brought something to eat in the evening, he took that and ate it, when he got through eating the man said lie down and take a good rest tonight. 39. next morning when he got ready he started to go home, so then he got there at home and took another rest all night again, next morning the chief came to see him. 40. now he told this man, the chief, he said I got some news, what happened since I been gone, this big animal I saw and never saw before he sent for us to come over there to be around with

him. 41. we'll be in the woods around anywhere, so he summoned us, come over, we'll call the game so you can live on any kind of meat, that's the way he treated us. 42. the first one is a deer, the second is an elk, the third is a bear, the fourth one is a moose, that's all there'll be for your people to live on. 43. and the other small game is first the red squirrel, the other one the black squirrel, third the groundhog, fourth the raccoon, when you want go and hunt anything you want to get. 44. he said that's about all, that many animals which they'll use now, they can go home so they can live on that. 45. now he says that's all the news I got when I arrived here, I think I have to return to the woods, I'll finish up telling you what you're going to do some time after today.

4. Our tentative judgments on word boundaries are reflected in the spacing of Seneca words in the text itself (**2,** above), in the interlinear translation (**2,** above), and in the alphabetic word list below.

In the first transcription of the text, we separated sequences of phonemes according to what impressed us as open juncture, however fleeting this impression might be: in short, we wrote in words; for the longer pauses, when it seemed that the informant might be giving us time to catch up with him, we inserted slant lines in the text (and we were in part influenced by observation of Seneca intonation). Thus far, open juncture is a phonetic impression which marks the end of a word (or phrase). Guided by open junctures, we read the text back to the informant and received the following types of response: (1) the informant would accept the juncture-delineated word as we read it; his acceptance was shown by promptly offering some corresponding meaning in English; (2) the informant would not accept the juncture-delineated word; he would change what we read back to him, generally shortening or lengthening our juncture-delineated word before offering a meaning in English for what then amounts to a word determined by two criteria, the linguist's impression of phonetic juncture and the native speaker's testimony on free forms. We recorded all the informant's revisions and also all his English translations irrespective of whether he supplied us with one gloss or more than one gloss for a given Seneca form.

The alphabetic list of words below shows the range of meaning ascribed to Seneca words which appear in more than one section of the text or repeatedly within one section. The list is exhaustive: every word in the text is given below, with one or more than one translation for each word. Parenthetic numbers make reference to the sections of the text, under **2,** in which the word occurs: these sectional reference numbers are given after the gloss, so that reference is made to a particular section in which a particular meaning may be found. A few words appear more than once in a section: this is noted (by superior numbers) within the parentheses giving the sectional number. Asterisked words were not analyzed for morphemes and do not appear in the morpheme index.

The alphabetic arrangement of words serves also as a finder list for meanings of sequences of morphemes given under **5,** below.

Alphabetic List of Words

ahsǫ? *more* (1)
ahsǫkho? *more yet* (43)
aki·wayętači? *I got news* (40)
aki·wayętačye? *I got all the story* (45)
* akwe·nǫ·n *possible* (44)
ata·šnyet *to speak to them* (30)
ati?kwa *how he is* (24)
ati?kwani·s *what you think* (11)
ayakni?se·k *they will be here* (31)
ayę·? *I thought* (8, 22), *he thought* (23)
a·e? *again* (19, 32[3], 37[6], 38)
ʔę·kwashǫ· *he thought* (35)
čhiyakwanǫke? *long time since we lived here* (28)

*čiʔtęʔǫ· *bird* (36)
čone·iskyǫ·n *red squirrel* (43)
čonę·ʔtaʔ *elk* (42)
čoʔči *for a long time* (26)
čoʔe·kah *raccoon* (43)
čyakwonǫke *where we live* (27)
čyonǫtate *to the hill* (19)
čyǫčyęhtǫ *first one* (18)
čyǫčyęʔǫhtǫ *first one* (43)
ehshihšnyatka·yǫ· *you will go watch him* (38)
ehsnǫhkwaʔšyonye *you will make medicine for him* (21)
esahčyǫʔk *don't be scared* (30)
eshešnyatka·ęʔǫ· *they're going to watch him* (30)
eshišnyetka·ęʔǫ· *you watch him* (34)
eskahte·nti *I'll go home* (25, 45)
ešnowaeʔčih *make it good* (16)
ewi·yoa·k *clean him good* (18)
ewǫhsawę *they are going to start* (44)
eya?kwe?se·ik *to be around* (40)
*eya·kweh *we think* (18)
eyethiya?wętho *we'll kill them* (4)
eyokayę *willing* (3)
eyo·hę *tomorrow* (26)
eyǫknitha·ʔ *to you* (45)
eyǫkwaye·i *we'll have a meeting* (2)
e·inǫkha *he's going after him* (19)
e·noʔe·it *he stays over night* (32, 38)
ęcha·wi *bring* (20)
ęčišnikwa·a *you can get it* (17)
ęčyitwasho·ni *they'll put it back on* (18)
ęčyǫheʔkǫ·ǫk *it will be to live on* (41), *we live on it* (44)
ęhsatekho·ni *you'll eat* (37)
ęhsatkahtǫ *go look* (10)
ęhseno?e·it *he will stay overnight* (38)
*ęhse·i *you* (11, 43)
ęhskahte·nti *I can go home* (24)
ękenoʔe·it *I'll stay overnight* (25)
ękhahatakǫ· *in the woods* (45)
ękwa·o·wi *I'll tell* (2)
ęǫčye·ʔtak *you use it* (20)
ęǫhte·nti *he may go* (3)
ęǫtawa·e *he will wash it out* (16)
ęshǫhehkǫ·ǫk *you can live on that too* (42)
ęsnowa·e *he'll wash it* (18)
*ęškǫ·wǫtha?s *show me* (9)
ętha·wi *he brings* (19)
ętwahte·nti *we will go* (3)
ętwatowe·hse·ik *hunting* (44)
ę· *yes* (34, 37)
hae?kwah (*?*) (10, 11)
hahseno·wa·neh *big chief* (6, 23)
hano·nka·h *he is whistling* (35)
hanyošyo·t *he sat down* (26)
haska·ne·is *he wants* (15)
hatha·eʔne *he's walking slowly* (25)
hatinǫkek *in village* (1, 4)
hatinǫke *where he lived* (27)
hayashę·ʔ *where he lay* (6), *lying* (7[2], 13, 20), *he is lying* (8, 10), *he is lying down* (21), *he lies down* (26)
*haya?ti· *alone* (6)
ha?kwistę *something* (23, 27)
ha?non *he was in* (30)
ha?tewe·inishę· *it's noon* (22)
ha·tekaye·i *it's the end* (45)
ha·tha·eʔne *he's walking* (34), *he's walking slowly* (25, 37)
ha·tikaye·i *good enough* (24)
ha·wa·ye *he woke up* (31)
ha·wi *what he brings* (28)
hehę?čyǫ *where he stayed* (39)
hekęǫtayę *tree lying down* (30)
henętwakwe·ini *all we can* (5)
henithone·inǫ *tracks where they came from* (32)
heniwahsǫ·ti·s *all night* (30, 31, 35, 38)
heniwe·nishe·is *all day* (25)
heni·yǫ·ʔ *plenty* (44)
heno?ǫ·wę *what happened* (40)
henǫhe·ihkǫ *to live on* (1), *what they used to live on* (2)
henyakwa·e *bear* (18)
hethatinǫke *where they live* (5)
hethayashę·ʔ *where he's lying* (10, 11), *where he lay* (14)
hethohtę·čyo· *home* (39)
hetinyošyo·t *they are sitting* (29)
hetiyoswe·nte *in its hollow* (29)
hetwakahtenčyǫ· *where I came from* (25)
heʔnǫta·ya·kwe·i *where we come from* (38)
heʔtkęhhehsne·i *up high you can fly* (17)
he·itkę *up high* (12[2], 18, 36[2])
he·itkęta·ti *up high* (12)

he·ne·i? *he was with them* (6)
hękhe·nǫ·khǫ·? *I'm going to call them* (12)
hęntwe·i? *where we go* (4)
hęske·i? *back where I was* (25), *I'll go* (45)
hę?ę *no* (27)
hę·ǫ·weh *over there* (28), *that's where* (38[2])
hinči·hne·i? *we'll go there* (9)
hi·kę· *yonder* (16, 34)
honi·yǫ· *that's about all* (28)
hono?ęh *his mother* (8)
hono?ę·?keh *his head* (14)
honǫhtę·čyo·na·e *they went* (6)
honǫte·no·t *they are singing* (22)
hosa·ya·kę? *he went out* (29)
hosa·yene·i? *they went* (11)
hǫsa·ye·i? *he's gone* (19), *he went back* (31)
hothǫ·te? *he heard it* (22, 23)
hotkaye·i? *at dusk* (14)
hotǫęshę·? *he rested* (33)
howǫhse·nǫ? *their own chief* (2)
ho?shako·?a·? *he took her along* (9)
ho?šne·i? *you better go* (30), *you go* (34)
hǫsa·ne·i? *they went* (10)
hǫsa·tiya·? *they took him back* (6)
hǫsa·yǫ? *he got home* (39)
hǫ?kwe·nǫ·k *we'll call you* (21)
hǫ·kweh *man* (27, 29)
hǫ·weh *over there* (4)
hǫ·?wih *over there* (10)
i· *me* (42)
i·ne?wa? *I'm the one* (34)
i·s *you* (16, 17)
i·sna·e *it's you* (16), *you* (43)
i·wae? *it's me talking* (45)
i·waye?neh *I am the one* (30)
kahkako·wa· *buzzards* (17)
kahseno·wa·neh *his chief* (39)
kanǫ·kek *there is* (1)
kanyo?shǫ?ǫ? *anybody* (3), *game* (13), *all kinds of game* (24)
kanyo·? *game* (1, 40), *wild* (2, 28[2]), *anybody* (5, 18)
kaonǫta·se·i? *you come here* (17, 20)
kaonǫta·swe·i? *you better come here* (12)
katkathǫ? *nowhere* (36)
katowe·tha? *preference* (43)
kato·kę·shǫ· *same place* (28)
kaya·sǫ? *he's called* (11), *it's called* (42, 43, 45), *that's his name* (42), *what it's called* (43[3])
ka·šyǫče·tha? *lion* (30)
ka·t *sitting* (36)
ka·we *where* (27)
ka·weti?kwah *where* (22)
kęǫtak?ah *next to the log* (6), *beside the log* (26)
kęǫtayę? *tree is lying down* (25)
khahatakǫ· *in the woods* (6, 41)
khahatakǫ·shǫ·? *in the woods* (41)
khawi? *I brought* (27), *I'll bring* (32), *bring it* (37)
kowa·neh *big one* (25)
kwa?ayǫ· *rabbit* (43)
kwa?ho? *another one* (42)
naesaya?tawę? *trouble will not happen* (31)
nayashę·? *he lies* (16)
na· *this* (45)
na·e (?) (22, 28, 31, 43)
na·tinǫke? *the town* (2)
neh *the* (2, 6)
nehǫ·kwe·i?ta? *his people* (3)
nehǫ·weh *it belongs to him* (18)
nehǫ·we? *over there* (17)
nehse·ik *your food* (32)
nekho *there* (31, 41)
nena?ot *what* (2), *what it is* (11)
neokę? *deer* (10, 42, 45)
neyi?kę·? *that person* (21)
ne? *the* (11, 27, 43, 44), *that* (42)
ne?a·ak *eat it* (15)
ne?ęhse·ik *what you will eat* (27[2])
ne?ęhse·ikhi·kę· *you will eat that one* (33)
ne?hesho·ni·s *that's enough* (15)
ne?honi·yǫ· *that's about all* (45)
ne?hono· *I guess* (24)
ne?ho· *there* (6, 7, 9, 11, 25[2], 26, 30[2], 31, 34, 36, 37), *where* (5, 9, 14, 19)
ne?ho·na·e *there* (27)
ne?hotkani·yǫ· *there it's hanging up* (18)
ne?ka·e?yo·nih *that's the reason* (16)
ne?khawi? *that's what I bring* (33)
ne?kha·eyo·nis *that's why* (41)
ne?kyǫ?ǫ? *we'll be with you* (41)
ne?nih *those* (33)
ne?nǫ· *that* (23)
ne·nǫ·kweh *the people* (27)
ne?ǫkhi·ya·s *that's what they call us* (31)

ne?shǫ·kę·s *just* (1)
ne?tinyošyo·tak *they were sitting there* (31)
ne?wa· *side* (31)
ne·khoneh *another thing* (28), *another one* (42²)
ne·kwaneh *where he was* (23)
ne·ta?a·ǫ *I can't* (31)
ne·tikatka?ho? *nowhere* (31)
ne·? *the* (1, 7)
ne·?čyočyęhtǫ? *the first one* (42)
nihše?eo?tę· *you can handle it better* (16)
nikanyo?ta?s?a·a? *small game* (42)
nikho·ne?i· *we'll be here* (40)
niyawę?ǫh *that's what happened* (6)
*no·noęčo·?te? *nation* (4, 5)
nǫta·se·i? *do you come from* (27)
nǫ?owaǫti? *on sides* (29)
nǫ?shǫkwaye·i? *that's why he created us* (41)
nǫ·kweh *man* (26)
nyakwa·e? *bear* (7, 8, 42)
nye·no?s?a·? *dwarves* (27)
*okwe·inyǫ·n *a place* (17, 32, 42)
onęhsa? *mushroom* (1, 33)
ononǫ?ta? *potato* (1, 28)
onǫhkwa?shę? *medicine* (19, 20, 21)
onǫtate? *on the hill* (12)
onǫtka?te? *a lot of them* (40)
onǫ·e? *his scalp* (6, 17, 18)
osae?ta? *beans* (2, 28)
othwas?a·? *young one* (7)
*oya·ta? *Cherokee* (4, 5)
*oyentani? *moose* (42)
o?čyako·e·it *she hollered* (10)
o?ke·ikę? *I saw somebody* (8), *I saw him* (40)
o?ke·s?ah *in the evening* (13, 38)
o?kę·nekwę?s?a·? *he made up his mind* (2)
o?kwa·kwa· *on the other side* (31)
o?nehči? *long ago* (1, 28)
o?sateshehte·ko *have you waked up* (37)
o?shako·wi? *he told her* (8)
o?šiwa·ę? *he woke up again* (34)
o?thatkathǫ? *he's looking around* (23), *he looked around* (29, 31)
o?thowenǫęk *scalp him* (6)
o?tho·e·it *he hollered* (12, 19)
o?wahsawę? *he began* (13)
o?yanishet *it took a long time* (20), *too long* (26)
o·nae? *so again* (32, 34)
o·ne *now* (2, 10, 14)
o·neh *now* (9, 20, 24, 36, 37², 39, 41)
*o·nentini *that's me* (45)
o·ne·shothǫ·te? *he heard it again* (36)
o·nowa·e? *he will clean it off* (14)
o·shǫkniha? *he sent them to stay overnight* (30)
o·thatha·k *he took a walk again* (38), *he walked* (39)
o·thenǫtate·ikę? (?) (5)
o·ya? *another* (43)
o·ya?ne·iwa? *I'll get another person* (15)
o·ya·?kho? *another also* (2, 43)
ǫ·kweh *man* (7²), *person* (8)
ǫ·kwehikha·? *that person* (16)
ǫ·kwehǫ·weh *Indian* (1, 4, 5)
ǫ·kwehwa·e *a man I think* (10, 11)
sačhęhtǫnǫ· *you're tired I guess* (35)
sačyashę·? *he lay down again* (35)
sahte·nti? *he went home* (8, 39)
sakahte·nti? *I went home* (45)
sakye? *I woke up* (40)
sasačyashę·?shǫ· *lie down again* (31), *you better lie down again* (35)
sa·aye? *he woke up* (22, 29, 34, 37)
sa·čyę·? *he sits up* (22)
sa·ni·yǫ? *they got back* (18)
sa·ǫwahate *different one* (16)
sa·tǫkwe·i? *he's getting better* (24)
sa·?čiya·shǫ· *just a little while* (36)
senǫhtǫ· *you select* (43)
se·nona·e *don't* (30)
*shata?ke·i?a· *Cloud Eagle* (20)
shaya?ta·t *one man* (6, 30), *only one* (14)
shaya?ta·tshǫ? *same one* (37)
sha?ka·t *same* (6)
šhi·ya·wi? *they got it* (18)
shǫknyate·nyehto·nčye *he sent us here* (38)
shǫ·kho *where they came from* (31)
si·wǫkhanǫ·kę·s *he heard it* (27)
sǫ·ka· *some* (3), *somebody* (10, 13, 35)
šya·sǫ *your name* (20)
tasaoweno?se·kǫ? *he answered him* (34)
tasheswasnye·i? *he took care of him* (13)
tashǫknyate·nye·it *he sent us up here* (34)
tashǫkwate·nye·it *he sent us up here* (40)
ta?a·yę?he·it *he can't do a good job* (15)
ta?kwistę? *nothing* (30, 31)

ta· *now* (2, 6, 9, 11, 20)
ta·neh *now* (27, 28)
ta·ne?honi·yǫ· *that's about all* (44)
ta·ne?ho? *now there* (7, 41)
ta·ne·i?kę·s *now* (2)
ta·ne·?wa·k *that's what he ate* (33)
ta·o·nae? *again* (31)
ta·o·neh *now* (22[2], 26, 27, 40, 45)
ta·ǫwayǫ? *he gives it to him* (18), *he gave it to him* (33)
ta·šnye·it *he makes a speech* (35), *he answered* (37)
ta·šnyot *he talked to him* (31)
ta·to·kes *it's true* (28, 37)
ta·wayǫ? *he gave it to him* (27)
ta·yakę? *he came out* (31)
ta·yente·i? *he does not know what it is* (23)
*teča·ǫkwa·h *on both sides* (29)
tentišni·ya·wi? *you bring it* (18)
teo·kę? *he did not see them before* (36)
teskatha·k *I'll take another walk* (26)
tewǫkhe·it *I holler* (12)
teyakwatawenye·i *they scatter in walking* (41)
teyoswe·nte? *it's hollow* (25)
te?kanǫ·kek *there wasn't any* (1)
te?sne?s *they are not there* (31)
te?we·yę·? *not so far* (27)
te?wiye? *not so far* (27)
te·išešnye·i? *you take care of him* (16[2])
*te·owę·tǫ? *never before* (36)
tha·yawę? *it did not happen* (30)
*tha·yo·nih *wolf* (14)
thehto·ǫ? *groundhog* (43)
thotǫęshę·? *take another rest* (34)
*ti·yoshe·i? *a couple of fellows* (34), *two fellows* (37)
tokta·kǫkho? *black squirrel* (43)
tosa·tha·k *he took a walk* (31)
*toskęh *closer* (36)
to·kes *true* (3, 7, 18, 21, 35)
to·wonǫ·ęhkwęh *his scalp* (14)
tǫta·niya·wi? *they got it* (18)
tǫtišnye?tǫ·ti? *they crow* (18)
waenǫti·yo? (?*) (5)
wahte·nti? *he went* (37)
waoti·ye·i? *they come together* (3)
waǫwaha·t *he told him* (14)
waǫwo·wi? *she told him* (10)
waǫwǫ·tǫ· *he asked him* (24, 27), *they ask him* (34)
wate·iskǫ·tak *they roast it* (33)
*wa?a·kę? *she said* (9, 10[2])
wa?kwayǫ? *we came here* (41)
wa?o?kę·? *when night comes* (25), *in the evening* (32), *when it's night* (32, 37), *at night* (38)
wa?o·hę·? *in the morning* (38, 39), *next morning* (39)
wa·ačhę? *he's tired* (26)
wa·ačyę· *he sat down* (26)
wa·akę? *he found* (32, 38), *he saw them* (36), *he saw it* (37)
wa·ayǫ? *he got there* (7, 20), *he came* (26, 32, 37), *he comes* (29)
wa·čyeǫkwashǫ· *he noticed it* (7)
wa·čye·no·ktę? *when he finished cleaning it* (17, 19)
wa·čyę· *he sat up* (31), *he sat down* (38)
wa·čę·kwashǫ· *he saw* (26)
*wa·ene? *first* (40)
*wa·ene·i? *they go* (5), *they went* (14), *they went again* (37)
wa·etčyashę·? *he lay down* (37)
wa·ęnǫhte·nti? *they started to go now* (5)
*wa·ę? *he said* (2, 8, 11, 12, 15, 16, 17, 19, 20[2], 21, 24, 25, 27[4] 30, 31, 32, 34[2], 35, 37[3], 38, 40[2], 44[2], 45)
wa·k *he eats it* (28)
wa·khwę·ta? *when he got through* (33, 37)
wa·ko·wi? *he told them* (3)
wa·kǫ·kę? *he saw them* (29, 34, 37)
wa·ktanyǫ· *he feels around* (7)
wa·ni·yǫ? *they arrived* (10), *they come* (17)
wa·o·ta?ti? *he went to sleep* (33)
wa·sho?ko?kę·s *he bites it* (15)
wa·šnyot *he talked to him* (23)
*wa·tatę? *he got up* (12)
wa·tekho·ni? *he eats it* (28), *he ate* (37)
wa·tiyǫ·nǫ? *they got there* (13)
wa·ti·yǫ? *one that comes* (40)
wa·tkathǫ? *he looks* (11), *he looks at him* (33)
wa·tǫęshę·? *he took a rest* (26, 33, 37, 38) *he takes a rest* (32)
wa·waǫtǫ·kho? *he asked them* (37)
wa·wǫnyo? *kill him* (6)
wa·wǫ·yǫ? *he gave it to him* (21)

wa·yo·ʔktę? *it's all he said* (45)
wa·yǫ? *he came* (10, 39)
wa·ʔčya?čye·inin *he lay down* (33)
wa·ʔektanyǫ· *she felt around* (10)
weni·ʔčyǫ? *sitting around* (23)
*wi·yo· *it's fine* (25)
woya?taę?he? *when he himself is sitting down* (29)
wo?nikoeye·ntat *he noticed it* (36)
wo·nǫtka?tę? *they came* (14)
wo·wǫęstę? *he stopped him* (15)
yoęntakǫ·ǫ? *in the ground* (1)

5. Our next problem was to find a way in which the constituent morphemes of words could be isolated. Morpheme markers were lacking in the text, both as first recorded and as revised; and the informant would repeat a word but not morphemes which might appear in sequence in a word. Morphemes were obtained by subsequent analysis: from parallel but slightly different forms occurring in the text itself; and from parallel words or sets of words elicited from informants. In both types of parallel material, a substitutable sequence of phonemes is isolated as a tentative morpheme; further parallel materials will show which of these tentative morphemes are sequences of more than one morpheme.

For example, within the text itself, some forms appear with the addition of -shǫ?ǫ? while identical forms lack -shǫ?ǫ?; the translation with -shǫ?ǫ? gives a plural meaning. However, in this paper, we systematically omit possible meanings because our translated materials are too meager to offer sufficient recurrences to make a meaning analysis.

When we asked the informant for Seneca words parallel to a word found in the text, we started with translation meaning in English. The response from the informant was counted as relevant when the elicited form showed partial similarity to the text form.

With such parallel materials, we were able to make the tentative morpheme divisions reflected in the list below.[4]

a- (a-ta·-šnyet), cp. -šnye·it.
-a- (wa·-a-kę?), cp. -kę?; (wa·-a-čyę·, cp. -čyę·; (wa·-a-čhę?), cp. -čhę-; (sa·-a-ye?), cp. -ye?; (wa·-a-yǫ?), cp. -yǫ?.
ahsǫ? ∼ ahsǫ- (ahsǫ-kho?).
-ak (ne?-ti-nyošyo·t-ak), cp. -nyošyo·t(-).
aki·- (aki·-wayętači?), cp. -wayętači?; (aki·-wayętačye?).
ati?kwa(-) (ati?kwa-ni·s).
-awi? ∼ -a·wi? ∼ -ya·wi? (k-h-awi?), (ne?-k-h-awi?), (h-a·wi?), (ęč-h-a·wi?), (ęt-h-a·wi?), (tentišnih·-ya·wi?), cp. s-h-awi? *what you brought*, ye·-awi? *what she brought*; (šhi·ya·wi?), (ıǫta·-ni-ya·-wi?), cp. tǫta·-.
ayakni- (ayakni-?se·k), cp. -?se·k.
(-)ayę·? cp. wa·-ayę·? *they think.*
-a·- (tos-a·-tha·-k), cp. -tha·-.
-a·ak (ne?-a·ak).
a·e?
-č- (sa·-č-yashę·?), (wa·-et-č-yashę·?), (sa-sa-č-yashę·?-shǫ·), cp. -yashę·?(-).
(-)čę·- (čę·-kwashǫ·), (wa·-čę·-kwashǫ·), cp. o?sa-čę·-kwashǫ· *you saw*, o?ka-čę·-kwashǫ· *I saw*, -kwashǫ·.
-čhę- ∼ -čhę? (wa·-a-čhę?), (sa-čhę-htǫ-nǫ·), cp. o?wa·-čhę? *it's tired*, wa?ǫ·-čhę? *she's tired.*
čhiyakwa- (čhiyakwa-nǫke?), cp. -nǫke?.
-čih ∼ -či? (čo?-či?), (o?-neh-či?), (ešno-wae?-čih).
-čiš- (ę-čiš-ni-kwa·a?), cp. -kwa·a?.

[4] Morphemic sequences are followed (in parentheses) by the text sequences in which they appear. The latter are hyphenated to show all morphemic sequence boundaries. Attesting forms are appended wherever possible, with hyphenation limited to the attesting function. Morphemic sequences which are also words do not appear as such in parentheses but are often identifiable by their juncture status; in ambiguous cases the word list may be consulted (**4**, above). Most hyphens printed at end of line show morpheme boundaries, but in a few cases an end line break in the middle of a morpheme is also shown by hyphen; possible ambiguity is avoided by comparing these doubtful end line breaks with the hyphens used for parenthetic examples.

-čiya·shǫ· (sa·ʔ-čiya·shǫ·), cp. taʔ-čiya·shǫ· *a short time.*

čone·iskyǫ·n(-) cp. čone·iskyǫ·n-shǫʔǫʔ *red squirrels.*

čonę·ʔtaʔ(-) cp. čonę·ʔtaʔ-shǫʔǫʔ *elks.*

čoʔ- (čoʔ-čiʔ), cp. -čiʔ.

čoʔe·kah(-) cp. čoʔe·kah-shǫʔǫ *raccoons.*

-čyako·- (oʔ-čyako·-e·it), cp. -e·it.

čyakwo- (čyakwo-nǫkeʔ), cp. -nǫkeʔ.

-čyaʔčye·inin (wa·ʔ-čyaʔčye·inin), cp. waʔ-ǫ-čyaʔčye·inin *she's lying down,* oʔka-čyaʔ čye·inin *I'm lying down.*

-čyeǫ- (wa·-čyeǫ-kwashǫ·), cp. waʔǫ-čyeǫ-kwashǫ· *she noticed it,* wa·ya-čyeǫ-kwashǫ· *those two fellows noticed it.*

-čye·no·ktęʔ (wa·-čye·no·ktęʔ), cp. oʔka-čye·no·ktęʔ *when I finished cleaning,* waʔǫ-čye·no·ktęʔ *when she finished cleaning.*

-čyęhtǫʔ ∼ -čyęʔǫhtǫʔ (čyǫ-čyęhtǫʔ), (čyǫ-čyęʔǫhtǫʔ), (ne·ʔ-čyo-čyęhtǫʔ), cp. twaka-čyęhtǫʔ *I'm the first one.*

-čyę· ∼-čyęʔ (wa·-a-čyę·), (wa·-čyę·), (sa·-čyęʔ), cp. oʔka·-čyę· *I sat down,* saka·-čyęʔ *I sat up.*

-čyit- (ę-čyit-wa-s-ho·niʔ).

čyo- (čyo-nǫ-ta-teʔ), cp. -ta-, o-nǫtako· *down hill,* o-nǫ·te·s *high hill;* (čyo-čyęhtǫʔ), (čyo-čyęʔǫhtǫʔ), (ne·ʔ-čyo-čyęhtǫʔ), cp. -čyęhtǫʔ.

-čyǫheʔ- ∼ -čoheh- (ę-čyǫheʔ-kǫ·ǫk), (ę-čoheh-kǫ·k).

e- (e-ska-hte·ntiʔ), cp. -hte·ntiʔ; (e-yethiyaʔwętho?), (e-wǫ-hsawęʔ), cp. -hsawęʔ; (e-wi·yoa·k), (e-yǫknitha·ʔ), (e-yo-kayęʔ), (e-yo·hęʔ), (e-yǫkwaye·iʔ).

-e (sa·-ǫwahat-e), cp. -ǫwahat(-).

ehs- (ehs-nǫhkwaʔ-šyonyeʔ),cp.-nǫhkwaʔ-; (ehs-hih-šnyatka·-yǫ·), cp. -šnyatka·-.

-ehto·nčye (shǫk-nya-te·ny-ehto·nčye), cp. (-)shǫk-.

-eoʔtę· (ni-hše?-eoʔtę·), cp. nikeʔ-eoʔtę· *I can handle it better.*

esa- (esa-hčyǫʔk), cp. -hčyǫʔk.

eshe- ∼ eshi- (eshe-šnyatka·-ę?ǫ·), (eshi-šnyetka·-ę?ǫ·), cp. -šnyetka·-.

ešnowaeʔ- (ešnowaeʔ-čih), cp. -čih.

-et- (wa·-et-č-yashę·ʔ), cp. -yashę·ʔ(-).

eya?kwe- (eya?kwe-?se·ik), cp. -?se·ik.

-e?ne? (ha-tha·-e?ne?), cp. -tha·-.

e·- (e·-no?e·it), cp. -no?e·it.

e·i (e·i-nǫkha?).

-e·iʔ ∼ -ye·iʔ (hǫ-sa·-n-e·iʔ), (ho-sa·-ye-n-e·iʔ), cp. hoʔk-e·iʔ *I went,* hoʔs-e·iʔ *you went;* (hoʔ-šn-e·iʔ), (hę-ntw-e·iʔ), cp. hęsn-e·iʔ *you two had better go,* hę·k-e·iʔ *I'd better go;* (kaoʔ-nǫta·-s-e·iʔ), (kao-nǫta·-sw-e·iʔ), (heʔ-nǫta·-ya·kw-e·iʔ), (wao-ti·-ye·iʔ), cp. (-)nǫta·-; (hǫsa-ye·iʔ), (hęsk-e·iʔ).

-e·inǫʔ (heni-thon-e·inǫʔ), cp. henitwak-e·inǫʔ *where I come from,* henithaw-e·inǫʔ *where he comes from.*

-e·it (ta-shǫk-wa-te·ny-e·it), (ta-shǫk-nya-te·ny-e·it), cp. (-)shǫk-; (oʔ-tho·-e·it), (te-wǫkh-e·it), (oʔ-čyako·-e·it), cp. te-hsa·-e·it *you hollered,* oʔčyǫkni-e·it *we two hollered.*

ę·

(-)ę- (ę-hsa-tka-htǫʔ), cp. -tka-; (ę-čyǫheʔ-kǫ·ǫk), (ę-čyoheh-kǫ·k), (ę-shǫheh-kǫ·ǫk), (ę-s-no-wa·eʔ), (ę-ǫ-ta-wa·eʔ), cp. -wa·eʔ; (ę-hska-hte·ntiʔ), cp. -hte·ntiʔ; (ę-čyit-wa-s-ho·niʔ), (ę-čiš-ni-kwa·aʔ), cp. -kwa·aʔ; (ę-twa-towe·-hse·ik), cp. -towe·-; (ę-s-no-wa·eʔ), cp. -wa·eʔ; (ę-ǫ-hte·ntiʔ), cp. -hte·ntiʔ; (ę-twa-hte·ntiʔ), (ę-hse-noʔe·it), (ę-ke-noʔe·it), cp. -noʔ-e·it; (ę-khahatakǫ·), (neʔ-ę-hse·i-k), (neʔ-ę-hse·i-k-hi·kę·), cp. -hse·i-; (ę-hsa-tekho·niʔ), cp. -tekho·niʔ; (wa·-ę-nǫ-hte·ntiʔ), cp. -hte·ntiʔ.

ęč- (ęč-h-a·wiʔ), cp. -awiʔ.

-ęh (ho-noʔ-ęh).

ękwa·- (ękwa·-o·wiʔ), cp. -o·wiʔ.

ęǫčye·ʔ- (ęǫčye·ʔ-tak).

-ęstęʔ (wo·wǫ-ęstęʔ), cp. oʔkheya-ęstęʔ *I stopped her,* oʔkaʔa-ęstęʔ *I stopped it.*

ęt- (ęt-h-a·wiʔ), cp. -awiʔ.

-ęʔǫ· (eshe-šnyatka·-ęʔǫ·), (eshi-šnyetka·-ęʔǫ·).

-ęʔkeh (ho-noʔ-ęʔkeh), cp. akoʔ-ękeh *my head,* kono?-ękeh *her head.*

(-)h- (k-h-awiʔ), (h-a·wiʔ), (ęt-h-a·wiʔ), (ęč-h-a·wiʔ), (neʔ-k-h-awiʔ), cp. -awiʔ.

(-)ha- ∼ -a- (n-a-yashę·ʔ), (ha-yashę·ʔ),

(het-ha-yashę·?), cp. -yashę·?(-); (ha-?non), cp.-?non; (ha-ska·ne·is), cp. -ska·ne·is; (ha-hseno·wa·neh), cp. -hseno·-wa·neh; (ha-nyošyo·t), cp. -nyošyo·t(-); (ha-no·-nka·h), cp. -no.nka·h.

hae?- (hae?-kwah).

ha?- (ha?-kwistę?).

ha?te- (ha?te-we·inishę·), cp. -we·inishę·.

ha·- (ha·-tha·-e?ne?), cp. -tha·-; (ha·-wa·-ye?), cp. -ye?.

ha·te- (ha·te-kaye·i?), cp. -kaye·i?.

ha·ti- ~ (-)hati- ~ -a·ti- (ha·ti-kaye·i?), cp. -kaye·i?; (hati-nǫke?), (hati-nǫkek), (het-hati-nǫke?), (n-a·ti-nǫke?).

-hčyǫ?k (esa-hčyǫ?k), cp. ta?e·sa-hčyǫ?k *you weren't scared*, tha·waka-hčyǫ?k *I wasn't scared.*

(-)he- (he-hę-?čyǫ?), cp. -?čyǫ?; (he-nǫhe·-ihkǫ?), (he-ti-nyošyo·t), cp. -nyošyo·-t(-); (he-kęǫtayę?), (he-nętwakwe·ini?), (he-nyakwa·e?), (he?tkęh-he-hsne·i?), cp. he?tkęh-.

heni- ~ heni·- (heni·-yǫ·?), (heni-we·nis-he·i-s), cp. -we·nis-; (heni-wahsǫ·ti·s), (heni-thon-e·inǫ?), cp. -e·inǫ?.

heno?- (heno?-ǫ·wę?).

-hes- (ne?-hes-ho·ni·s), cp. ho·ni·s; (tas-hes-wa-snye·i?), cp. -šnye·i?.

het- (het-ha-yashę·?), cp. -yashę·?; (het-hati-nǫke?), (het-hoh-tę·čyo·n), (het-wakah-tenčyǫ·), cp. -tę·čyo·(-).

heti- (heti-yo-swęntę?).

he?- (he?-nǫta·-ya·kw-e·i?), cp. (-)nǫta·-.

he?tkęh- (he?tkęh-he-hsne·i?), cp. he?tkęh-hęye? *he can fly.*

he·- (he·-ne·i?).

-he·i- (heni-we·nis-he·i-s), cp. -we·nis-.

-he·it (ta?a·-yę?-he·it), cp. (-)ta?a·-.

he·itkę?(-) ~ he·itkę- (he·itkę-ta·ti?), cp. he·itkę?-nkwa· *on top.*

hę- (hę-ntw-e·i?), cp. -e·i?; (hę-khe·-nǫ·k-hǫ·?), cp. -nǫ.k(-).

hęsk- (hęsk-e·i?).

-hę?- (he-hę-?čyǫ?), cp. -?čyǫ?.

hę?ę cp. hę?ę́· *no!*

hę- ~ (-)h- (h-ǫ·weh), (hę·-ǫ·weh), (ne-h-ǫ·weh), cp.-ǫ·weh.

-hę·? (wa?o·-hę·?), cp. wa?o·-.

-hih- (ehs-hih-šnyatka·-yǫ·), cp. -šnyatka·-.

hinčih- (hinčih-ne·i?).

(-)hi·kę· (ne?-ę-hse·i-k-hi·kę·), cp. -hse·i-.

-hkwęh (to·wo-nǫ·ę-hkwęh), cp. -nǫ·ę-.

(-)ho- ~ -ho? ~ -ho· (ho-thǫ·te?), cp. -thǫ·te?; (ho-wǫhse·nǫ?), (ho-sa·-ye-n-e·i?), (ho-sa·-ya·kę?), cp. -e·i?; (ho-tǫęshę·?), cp. -tǫęshę·?; (ho-nǫ-te·no·t), cp. -te·no·t; (ho-no?-ęh), cp. -ęh; (ho-no?-ę·?keh), cp. -ę·?keh; (ta·-ne?-ho-ni·-yǫ·), (ne?-ho-ni·-yǫ·), (ho-ni·-yǫ·), (ne?-ho-tka-ni·-yǫ·), cp. -yǫ·(-); (ta·-ne?-ho?), (kwa?-ho?), (ne?-ho·), (ne?-ho·-na·e).

-ho (shǫ·k-ho).

-hoh- (het-hoh-tę·čyo·n), cp. -tę·čyo·n.

-hono· (ne?-hono·).

honǫh- (honǫh-tę·čyo·-na·e).

hot- (hot-kaye·i?), cp. -kaye·i?.

ho?- (ho?-šn-e·i?), cp. -e·i?; (ho?-shako·-?a·?).

-ho-ni? (wa·-te-k-ho·ni?), (ę-čyit-wa-s-ho·-ni?).

-ho·ni·s (ne?-hes-ho·ni·s), cp. nekhos-ho·-ni·s *be right here.*

hǫ- (hǫ-sa·-yǫ?), (hǫ-sa·-ye·i?), (hǫ-sa·-ti-ya·?), (hǫ-sa·-ne·i?), cp. -yǫ?.

hǫ?- (hǫ?-kwe·-nǫ·k), cp. -nǫ·k(-).

-hǫ· (ka-to·-kę·s-hǫ·).

(-)hǫ·weh ~ -hǫ·we? ~ hǫ·?wih (ne-hǫ·-weh), (ne-hǫ·we?).

-hǫ·? (hę-khe·-nǫ·k-hǫ·?), cp. -nǫ·k(-).

-hsa- (ę-hsa-tka-htǫ?), cp. -tka-; (ę-hsa-tekho·ni?), cp. -tekho·ni?.

hsawę? (o?-wa-hsawę?), cp. o?-; (e-wǫ-, hsawę?), cp. eyǫ-hsawę? *she started to go*, ęhsa-hsawę? *you all started to go.*

-hse- (ę-hse-no?e·it), cp. -no?e·it.

-hseno·wa·neh (ha-hseno·wa·neh), (ka-hseno·wa·neh), cp. ye-hseno·wa·neh *her chief*, ke-hseno·wa·neh *my chief.*

-hse·i- (ne?-ę-hse·i-k), (ne?-ę-hse·i-k-hi·kę·), (ne-hse·i-k), cp. ę-ke·i-k *I eat that one*, ę-twa·-k *we all eat that one.*

-hse·ik (ę-twa-towe·-hse·ik), cp. -towe·-.

-hska- (ę-hska-hte·nti?), cp. -hte·nti?.

-hsne·i? (he?tkęh-he-hsne·i?), cp. he?tkęh-.

-hše?- (ni-hše?-eo?tę·), cp. -eotę.
-hte·nti? (sa-hte·nti?), (wa-hte·nti?), (ę-ǫ-hte·nti?), (ę-twa-hte·nti?), (sa-ka-hte·nti?), (wa·-ę-nǫ-hte·nti?), (ę-hska-hte·nti?), (e-ska-hte·nti?), cp. ęka-hte·nti? *I may go.*
-htǫ- (sa-čhę-htǫ-nǫ·), cp. -čhę-.
-htǫ? (ę-hsa-tka-htǫ?), cp. -tka-.
-ikha·? (ǫ·kweh-ikha·?), cp. (-) ǫ·kweh(-).
-iš- (tǫt-iš-nye?-tǫ·ti?), cp. -tǫ·ti?.
-i?kę·s ∼ -yi?kę·? (ta·-ne·-i?kę·s), cp. ta·-; (ne-yi?kę·?).
-i?ta? (ne-hǫ·kwe·-i?ta?).
i·(-) (i·ne?-wa?), (i·-waye?-neh), (i·-wae?).
i·s(-) (i·s-na·e).
k- (k-h-awi?), (ne?-k-h-awi?), cp. -awi?.
-k(-) (wa·-k), (ta·-ne·?-wa·-k), (wa·-te-k-ho·ni?), (wa·-k-o·wi?), (o?-sha-k-o·wi?), cp. -o·wi?; (sa-k-ye?), cp. -ye?; (te-ska-tha·-k), (tos-a·-tha·-k), (o·-tha-tha·-k), cp. -tha·-; (ne?-ę-hse·i-k), (ne?-ę-hse·i-k-hi·kę·), cp. -hse·i-; (ne-hse·i-k), (o?-thowe-nǫ·ę-k), cp. -nǫ·ę.
(-)ka- (ka-hseno·wa·neh), cp. -hseno·wa·-neh; (ka-ya·s-ǫ?), cp. -ya·s(-); (ka-tka-thǫ?), cp. -thǫ?; (ka-to·-kę·s-hǫ·), (ka-towe·-tha?), (sa-ka-hte·nti?), cp. -hte·-nti?; (ne·-ti-ka-tka-?ho?), cp. -tka-.
kahka- (kahka-ko·wa·).
(-)kanǫ·kek (te?-kanǫ·kek).
kanyo·? ∼ (-)kanyo?- (ni-kanyo?-ta?s?-a·a?), (kanyo?-shǫ?ǫ?).
kao- (kao-nǫta·-s-e·i?), (kao-nǫta·-sw-e·i?), cp. (-)nǫta·-.
-kaye·i? (ha·ti-kaye·i?), (hot-kaye·i?), (ha·-te-kaye·i?).
ka·- (ka·-t), cp. ne?ho-ye·-t *she sits there*, ne?ho-ha·-t *he sits there;* (ka·-we-ti?-kwah), (ka·-we), cp. -kwa-.
ka·šyǫče·tha?(-) cp. ka·šyǫče·tha?-shǫ?ǫ? *lions.*
-ke- (ę-ke-no?e·it), cp. -no?e·it.
-ke·i- (o?-ke·i-kę?), cp. -kę?.
-ke·s- (o?-ke·s-?ah), cp. -?ah.
(-)kęǫta- (kęǫta-yę?), (he-kęǫta-yę?), (kęǫ-ta-k?ah), cp. kęǫta-tęhta·? *railroad ties.*
-kę? (wa·-kǫ·-kę?), (o?-ke·i-kę?), cp. wa·o·-kę? *he saw him*, wa·ya·-kę? *he saw me;* (te-o·-kę?), (wa·-a-kę?), cp. wa·ti·-kę? *They all found*, wa·ni·-kę? *they two found.*
-kę·nekwę?s- (o?-kę·nekwę?s-ęa·?), cp.-?a·?.
-kę·s(-) (si·-wǫkha-nǫ·-kę·s), cp. -wǫkha-; (wa·-sho?ko?-kę·s), cp. wa·-; (ka-to·-kę·s-hǫ·).
-kę·? (wa?o?-kę·?), cp. wa?o?-.
(-)khahatakǫ·(-) (ę-khahatakǫ·), (khaha-takǫ·-shǫ·?).
-kha·eyo·nis ∼ -ka·e?yo·nih (ne?-kha·eyo·-nis), (ne?-ka·e?yo·nih), cp. (-)neh.
-khe·- (hę-khe·-nǫ·k-hǫ·?), cp. -nǫ·k(-).
-khi·- (ne?-ǫ-khi·-ya·s), cp. -ya·s(-).
-kho(-) ∼ -kho·- ∼ -kho? (ne·-kho-neh), cp. (-)neh; (ne-kho), (ni-kho·-ne?i·), (tokta·-kǫ-kho?), cp. tokta·kǫ(-); (o·ya·?-kho?), (waǫ-wǫ·-tǫ·-kho?), (ahsǫ-kho?).
-khwę·ta? (wa·-khwę·ta?), cp. wa·ti-khwę·-ta? *when they got through*, o?ke-khwę·ta? *when I got through.*
kowa·- (kowa·-neh).
-ko·wa· (kahka-ko·wa·).
-kǫ·- (wa·-kǫ·-kę?), cp. -kę?.
-kǫ·k ∼ -kǫ·ǫk (ę-čoheh-kǫ·k), (ę-čyǫhe?-kǫ·ǫk), (ę-shǫheh-kǫ·ǫk).
-kǫ·ǫ? (yoęnta-kǫ·ǫ?), cp. yoęnta-.
-ktanyǫ· (wa·?e-ktanyǫ·), (wa·-ktanyǫ·).
-kwa- ∼ -kwah ∼ kwa?- (ne·-kwa-neh), (ka·-we-ti?kwah), (hae?-kwah), (kwa?-ho?), cp. (-)ho-.
-kwashǫ· (wa·čyeǫ-kwashǫ·), (wa·-čę-kwashǫ·), (čę·-kwashǫ·), cp. etwa-kwashǫ· *we all thought*, wa·enǫ-kwashǫ· *they all thought.*
kwa?ayǫ·(-) cp. kwa?ayǫ·-?shǫ?ǫ? *the rabbits.*
-kwa·- (o?-kwa·-kwa·), cp. ka·o?-kwa· *this side.*
-kwa·a? (ę-čiš-ni-kwa·a?), cp. ęsha-kwa·a? *he can go and get it*, ęske-kwa·a? *I can go and get it.*
-kwe·- (hǫ?-kwe·-nǫ·k), cp. -nǫ·k(-).
-kwistę? (ta?-kwistę?), (ha?-kwistę?).
-kyǫ?ǫ? (ne?-kyǫ?ǫ?).
-k?ah (kęǫta-k?ah), cp. kęǫta-.
-n- (hǫ-sa·-n-e·i?), (ho-sa·-ye-n-e·i?), cp. -e·i?.

-na?ot (ne-na?ot).

na·

(-)na·e(-) ~ -nae? (honǫh-tę·čyo·-na·e), (nae-sa-ya?-ta-wę?), cp. -ta-; (ne?-ho·-na·e), (ta·-o·-nae?), (o·-nae?), (i·s-na·e), (se·no-na·e).

(-)neh ~ (-)ne·(-) ~ (-)n- ~ ne- ~ (-)ne?(-) ~ ne·?(-) (ta·-o·-neh), (ta·-neh), (o·-neh), (kowa·-neh), (i·-waye?-neh), (ne·-kho-neh), (ne·-kwa-neh), (o·-ne), (o?-neh-či?), (n-ǫ·kweh), (ne·-n-ǫ·-kweh), (neh-ǫ·kweh), cp. (-)ǫ·kweh(-); (n-a·ti-nǫke?), (n-a-yashę·?), (ne-kho), (ne?-ho·), (ne?-ho·-na·e), (ne?-hono·), (ne?-nih), (ne?-wa·), (ne-hǫ·kwe·-i?ta?), (ne-yi?kę·?), (ne-hǫ·weh), (ne-hǫ·we?), (ne-na?ot), (ne·-ti-ka-tka-?ho?), (ne·-ta?a·-ǫ), (ne?-k-awi?), cp. -awi? (ne?-ǫ-khi·-ya·s), cp. -ya·s(-); (ne?-ę-hse·i-k), (ne?-ę-hse·i-k-hi·kę·), cp. -hse·i-; (ne?-hes-ho·ni·s), cp. -ho·ni·s; (ne?-kyǫ?ǫ?), (ne?-a·ak), (ta·-ne?-ho-ni·-yǫ·), (ne?-ho-ni·-yǫ·), (ne?-nǫ·), (ne?-shǫ·kę·s), (ne?-kha·eyo·nis), (ne?-ka·e?yo·nih), (ta·ne?-ho?), cp. ta·-; (i·-ne?-wa?), (ne?-ho-tka-ni·-yǫ·), cp. -yǫ·(-); (ne?-ti-nyošyo·t-ak), cp. -nyošyo·t(-); (ne·?-čyo-čyęhtǫ?), cp. -čyęhtǫ?; (ta·-ne·?-wa·-k).

-ne?s (te?-s-ne?s), cp. te?-.

-ne·iwa (o·ya?-ne·iwa?).

-ne·i? ~ -ne?i· (he·-ne·i?), (hinči·h-ne·i?), (ni-kho·-ne?i·).

neokę?(-) cp. neokę?-shǫ?ǫ? *several deer.*

-nętwakwe·ini? (he-nętwakwe·ini?).

ni- (ni-kanyo?-ta?s?a·a?), cp. (-)kanyo?(-); (ni-ya-wę?-ǫh), (ni-hše?-eo?tę·), cp. -eo?tę·; (ni-kho·-ne?i·).

-ni- (ę-čiš-ni-kwa·a?), cp. -kwa·a?; (tǫta·-ni-ya·wi?), cp. tǫta·-.

-nih (ne?-nih).

-niha? (o·-shǫk-niha?), cp. (-)shǫk-.

-nikoeye·ntat (wo?-nikoeye·ntat), cp. ǫk-nikoeye·ntat *I noticed it.*

-ni·- (wa·-ni·-yǫ?), cp. -yǫ?; (sa·-ni·-yǫ?), (we-ni·-?čyǫ?), cp. -?čyǫ?; (ne?-ho-tka-ni·-yǫ·), cp. -yǫ·(-); (ta·-ne?-ho-ni·-yǫ·), (ne?-ho-ni·-yǫ·), (ho-ni·-yǫ·).

-ni·s (ati?kwa-ni·s), cp. ati?kwa(-).

-no- (o·-no-wa·e?), (ę-s-no-wa·e?), cp. -wa·e?.

-nonǫ?ta? (o-nonǫ?ta?), cp. ak-nonǫ?ta? *my potato,* sa-nonǫ?ta? *your potato.*

-no?- (ho-no?-ę·?keh), (ho-no?-ęh), cp. -ę·?keh, hoti-no?-ęh *their mother.*

-no?e·it (e·-no?e·it), (ę-hse-no?e·it), (ę-ke-no?e·it), cp. eye-no?e·it *she'll stay overnight,* o?se-no?e·it *you stay overnight.*

-no?s- (nye·-no?s-?a·?), cp. nye·-.

-no·nka·h (ha-no·nka·h), cp. ye-no·nka·h *she's whistling,* ni·-no·nka·h *the two of us are whistling.*

-nǫ- (wa·-ę-nǫ-hte·nti?), cp. -hte·nti?; (ho-nǫ-te·no·t), cp. -te·no·t; (o-nǫ-ta-te?), (čyo-nǫ-ta-te?), cp. -ta-, čyo-; (o-nǫ-tka?-te?), (wo·-nǫ-tka?-te?).

-nǫhe·ihkǫ? (he-nǫhe·ihkǫ?).

-nǫhkwa?- (o-nǫhkwa?-shę?), (ehs-nǫh-kwa?-šyonye?), cp. ak-nǫhkwa?-shę? *me medicine.*

-nǫhtǫ· (se-nǫhtǫ·), cp. ęke-nǫhtǫ· *I'll choose,* ęhse-nǫhtǫ· *you'll choose.*

-nǫke? ~ -nǫkek (hati-nǫke?), (čyakwo-nǫke?), (čhiyakwa-nǫke?), (hati-nǫkek), (het-hati-nǫke?), (n-a·ti-nǫke?).

-nǫkha? (e·i-nǫkha?).

(-)nǫta·- (nǫta·-s-e·i?), (kao-nǫta·-s-e·i?), (kao-nǫta·-sw-e·i?), (he?-nǫta·-ya·kw-e·i?), cp. he?-nǫta·-ke·i? *where I come from,* kao-nǫta·-ne·i? *the two of them come here.*

nǫ?- (nǫ?-shǫk-waye·i?), cp. (-)shǫk-; (nǫ?-o-waǫ-ti?).

-nǫ? ~ -nǫ·(-) (wa·-ti-yǫ·-nǫ?), cp. -yǫ?; (sa-čhę-htǫ-nǫ·), cp. -čhę-; (ne?-nǫ·), cp. (-)neh; (si·-wǫkha-nǫ·-kę·s), cp. -wǫkha-.

-nǫ·ę- ~ -nǫ·e? (o-nǫ·e?), (o?-thowe-nǫ·ę-k), (to·wo-nǫ·ę-hkwęh), cp. ak-nǫ·e? *my scalp.*

-nǫ·k(-) (hǫ?-kwe·-nǫ·k), (hę-khe·nǫ·k-hǫ·?), cp. hę·yę·-nǫ·k *he'll call you,* wa·e-nǫ·k *I called him.*

-ntw- (hę-ntw-e·i?), cp. -e·i?.

-nya- (shǫk-nya-te·ny-ehto·nčye), (ta-shǫk-nya-te·ny-e·it), cp. (-)shǫk-.

(-)nyakwa·e? (he-nyakwa·e?).
-nye?- (tǫt-iš-nye?-tǫ·ti?), cp. -tǫ·ti?.
nye·- (nye·-no?s-?a·?), cp. nye·-?a·? *dwarf.*
-nyošyo·t(-) (ha-nyošyo·t), (he-ti-nyošyo·t), (ne?-ti-nyošyo·t-ak), cp. ye-nyošyo·t *she's sitting down,* ke-nyošyo·t-ak *I was sitting all night.*
o- (o-nǫ-ta-te?), cp. -ta-; (o-sae?ta?), cp. ko-sae?ta? *her beans,* ho-sae?ta? *his beans;* (o-nǫhkwa?-shę?), cp. -nǫhkwa?-; (o-nǫ·e?), cp. -nǫ·ę; (o-nonǫ?ta?), cp. -nonǫ?ta?; (o-nǫ-tka?-te?).
-o- (tasa-o-weno?se·kǫ?), cp. tasa-; (nǫ?-o·waǫ-ti?).
onęhsa?(-) cp. onęhsa?-shǫ?ǫ? *mushrooms*
othwas- (othwas-?a·?).
o?- (o?-wa-hsawę?), cp. o?-kahsawę? *I'm beginning,* o?-sahsawę? *you're beginning;* (o?-tha-tka-thǫ?), cp. -tka-; (o?-sa-teshehte·ko), cp. -teshehte·ko; (o?-ke·ikę?), cp. -kę?; (o?-neh-či?), (o?-kwa·kwa·), cp. -kwa·-; (o?-sha-k-o·wi?), (o?-ši-wa·-ę?), (o?-yanishet), cp. -yanishet(-); (o?-kę·nekwę?s-?a·?), (o?-thowenǫ·ę-k), cp. -nǫ·ę; (o?-tho·-e·it), (o?-čyako·-e·it), cp. -e·it; (o?-ke·s-?ah), cp. -?ah.
(-)o·- (o·-tha-tha·-k), cp. -tha·-; (o·-ne), (o·-no-wa·e?), cp. -wa·e?; (o·-shǫk-niha?), cp. (-)shǫk-; (te-o·-kę?), cp. -kę?; (wa·-o·-ta?-ti?), cp. -ta?(-); (ta·-o·-neh), (o·-neh), (ta·-o·-nae?), (o·-nae?).
o·ne·- (o·ne·-sho-thǫ·te?), cp. -thǫ·te?.
-o·wi? (wa·-k-o·wi?), (waǫ-w-o·wi?), (o?-sha-k-o·wi?), (ękwa·-o·wi?), cp. wa·-y-o·wi? *I told him,* o?še·y-o·wi? *you told her.*
o·ya?(-) ∼ o·ya·?- (o·ya·?-kho?), (o·ya?-ne·iwa?).
-ǫ- (ę-ǫ-hte·nti?), cp. -hte·nti?; (ę-ǫ-ta-wa·e?), cp. -wa·e?; (ta·-ǫ-wa-yǫ?), (ne?-ǫ-khi·-ya·s), cp. -ya·s(-).
-ǫ (ne·-ta?a·-ǫ), cp. (-)ta?a·-.
-ǫh (ni-ya-wę?-ǫh).
-ǫwahat(-) (sa·-ǫwahat-e), cp. ta·-ǫwahat *one sent yonder to do it.*
-ǫ? (ka-ya·s-ǫ?), cp. -ya·s(-); (š-ya·s-ǫ?).
(-)ǫ·kweh(-) ∼ hǫ·kweh ∼ -hǫ·kwe·- (neh-ǫ·kweh), (ǫ·kweh-wa·e), (ǫ·kweh-ǫ·weh), (ǫ·kweh-ikha·?), (n-ǫ·kweh), (ne·-n-ǫ·kweh), (ne-hǫ·kwe·-i?ta?).
-ǫ·weh (ne-h-ǫ·weh), (h-ǫ·weh), (hę·-ǫ·weh), (ǫ·kweh-ǫ·weh).
-ǫ·wę? (heno?-ǫ·wę?).
-s- (ę-s-no-wa·e?), cp. -wa·e?; (ę-čyit-wa-s-ho·ni?), (te?-s-ne?s), cp. te?-; (nǫta·-s-e·i?), (kao-nǫta·-s-e·i?), cp. (-)nǫta·-.
-s (heni-we·nis-he·i-s), cp. -we·nis-.
(-)sa- ∼ (-)sa·- ∼ sa·?- (sa-čhę-htǫ-nǫ·), cp. -čhę-; (sa-hte·nti?), (sa-ka-hte·nti?), cp. -hte·nti?; (sa-č-yashę·?), (sa-sa-č-yashę·?-shǫ·), cp. -yashę·?(-); (sa-k-ye?), (sa·-a-ye?), cp. -ye?; (o?-sa-teshehte·ko), cp. -teshehte·ko; (nae-sa-ya?-ta-wę?), cp. -ta-; (sa·-ǫwahat-e), cp. -ǫwahat(-); (sa·-tǫkwe·i?), cp. -tǫkwe·i?; (sa·-čyę·?), cp. -čyę·; (hǫ-sa·-n-e·i?), (ho-sa·-ye-n-e·i?), (ho-sa·-ya·kę?), (hǫ-sa·-ye·i?), (hǫ-sa·-tiya·?), cp. -e·i?; (sa·-ni·-yǫ?), (hǫ-sa·-yǫ?), cp. -yǫ?; (sa·?-čiya·shǫ·), cp. -čiya·shǫ·.
-sae?ta? (o-sae?ta?), cp. ake-sae?ta? *my beans,* sa-sae?ta? *your beans.*
se- (se-nǫhtǫ·), cp. -nǫhtǫ·.
se·no- (se·no-na·e), cp. -na·e.
sha- (sha-?ka·-t), (sha-ya-?ta·-t), (sha-ya-?ta·-t-shǫ?), cp. -?ka·-.
-sha- (o?-sha-k-o·wi?), cp. -o·wi?.
-shako·- (ho?-shako·-?a·?).
-shę? (o-nǫhkwa?-shę?), cp. -nǫhkwa?-.
-sho- (o·ne·-sho-thǫ·te?), cp. -thǫ·te?.
-sho?ko?(-) (wa·-sho?ko?-kę·s), cp. wa·-.
-shǫheh- (ę-shǫheh-kǫ·ǫk), cp. -čyǫhe?-.
(-)shǫk- (shǫk-nya-te·ny-ehto·nčye), (ta-shǫk-nya-te·ny-e·it), (ta-shǫk-wa-te·ny-e·it), (o·-shǫk-niha?), (nǫ?-shǫk-waye·i?), cp. nǫ?-shǫk-ni·ye·i? *he created me.*
-shǫ? (sha-ya-?ta·-t-shǫ?), cp. -?ka·-.
-shǫ?ǫ? (kanyo?-shǫ?ǫ?), cp. kanyo?(-).
shǫ·k- (shǫ·k-ho).
-shǫ·kę·s (ne?-shǫ·kę·s), cp. (-)ne?(-).
-shǫ·? (khahatakǫ·-shǫ·?).
si·- (si·-wǫkha-nǫ·-kę·s), cp. -wǫhka-.
-ska- (te-ska-tha·-k), cp. -tha·-; (e-ska-hte·nti?), cp. -hte·nti?.

-ska·ne·is(-) (ha-ska·ne·is), cp. sa-ska·ne·is-a·hse·ik *you want to eat it*, yo-ska·ne·is-a·ye·ik *she wants to eat it.*

sǫ·ka·

-sw- (kao-nǫta·-sw-e·i?), cp. (-)nǫta·-.

-swe·nte? (te-yo-swe·nte?), (heti-yo-swe·nte?).

š- (š-ya·s-ǫ?), cp. -ya·s(-).

-še- (te·i-še-šnye·i?), cp. -šnye·i?.

šhi- (šhi·-ya·wi?), cp. tǫta·-.

-ši (o?-ši-wa·-ę?), cp. -ye?.

-šn- (ho?-šn-e·i?), cp. -e·i?.

-šnyatka·- ∼ -šnyetka·- (eshi-šnyetka·-ę?ǫ·), (ehs-hih-šnyatka·-yǫ·).

-šnye·it ∼ -šnyet ∼ -šnyot (ta·-šnye·it), (a-ta·-šnyet), cp. ho?ši-šnyet *you speak to them*; (ta·-šnyot), (wa·-šnyot).

-šnye·i? ∼ -snye·i? (te·i-še-šnye·i?), (tas-hes-wa-snye·i?), cp. te·iye-šnye·i? *I take care of him*, o?tehša-šnye·i? *you took care of him.*

-šyonye? (ehs-nǫhkwa?-šyonye?), cp. -nǫh-kwa?-.

-t(-) (sha-?ka·-t), (sha-ya-?ta·-t), (sha-ya-?ta·-t-shǫ?), cp. -?ka·-; (ka·-t), cp. ka·-.

(-)ta- ∼ ta·(-) (ta-shǫk-nya-te·ny-e·it), (ta-shǫk-wa-te·ny-e·it), cp. (-)shǫk-; (o-nǫ-ta-te?), (čyo-nǫ-ta-te?), cp. onǫ-ta-kǫ· *down hill*, onǫ-ta-ke·ya·t *up on top of the hill*; (ę-ǫ-ta-wa·e?), cp. -wa·e?; (nae-sa-ya?-ta-wę?), (ta·-ya-kę?), cp. thaesaya?-ta-wę? *nothing happened to you*; (ta·-šnye·it), cp. -šnye·it; (a-ta·-šnyet), (ta·-šnyot), (ta·-yakę?), cp. -yakę?; (ta·ne?-ho-ni·-yǫ·), cp. -yǫ?; (ta·-to·kes), (ta·-wa-yǫ?), cp. -yǫ?; (ta·-ǫ-wa-yǫ?), (ta·-ne?-ho?), (ta·-ne-i?kę·s), (ta·neh), (ta·-o·neh), (ta·-o·-nae?), (ta·-yente·i?), (ta·-ne·?-wa·-k).

-tak (wa-te·iskǫ·-tak), cp. -te·iskǫ·-; (ęǫ-čye·?-tak).

tas- (tas-hes-wa-snye·i?), cp. -šnye·i?.

tasa- (tasa-o-weno?se·kǫ?), cp. tasa-eweno-?se·kǫ? *he answered him.*

-tawenye·i (te-yakwa-tawenye·i), cp. tek-nya-tawenye·i *the two of them wandered around*, teyǫ-tawenye·i *she wandered around.*

(-)ta?(-) (ta?-kwistę?), (wa·-o·-ta?-ti?), cp. wa·kho·-ta? *she took a sleep*, wo·ni-ta?-hǫ· *those fellows took a sleep.*

(-)ta?a·- (ne·-ta?a·-ǫ), (ta?a·-yę?-he·it).

-ta?s?a·a? (ni-kanyo?-ta?s?a·a?), cp. kan-yo?(-).

-ta·ti? (he·itkę-ta·ti?).

te- (te-o·-kę?), cp. -kę?; (te-ska-tha·-k), cp. -tha·-; (te-yo-swe·nte?), (te-yakwa-tawenye·i), cp. -tawenye·i; (te-wǫkh-e·it), cp. -e·it.

-te- (wa·te-k-ho·ni?).

-tekho·ni? (ę-hsa-tekho·ni?), cp. ętwa-tekho·ni? *we'll all eat.*

tentišni·- (tentišni·-ya·wi?), cp. awi?.

-teshehte·ko (o?-sa-téshehte·ko), cp. o?ka-teshehte·ko *have I waked up*, wa·-teshehte·ko *has he waked up.*

te?- (te?-s-ne?s), cp. te?-ske?s *I'm not there*, ne·-te?-she?s *he's not there*; (te?-kanǫ·kek), cp. -kanǫ·kek; (te?-we·yę·?), (te?-wiye?).

-te? (o-nǫ-ta-te?), (čyo-nǫ-ta-te?), cp. -ta-; (o-nǫ-tka?-te?), (wo·-nǫ-tka?-te?).

te·i- (te·i-še-šnye·i?), cp. -šnye·i?.

-te·iskǫ·(-) (wa-te·iskǫ·-tak), cp. aka-te·-iskǫ *I roast them*, ho-te·iskǫ·-tak *he roasted them.*

-te·no·t (ho-nǫ-te·no·t), cp. ho-te·no·t *he's singing*, aka-te·no·t *I'm singing.*

-te·ny- (shǫk-nya-te·ny-ehto·nčye), (ta-shǫk-nya-te·ny-e·it), (ta-shǫk-wa-te·ny-e·it), cp. (-)shǫk-.

-tę·čyo·(-) ∼ -tenčyǫ· (honǫh-tę·čyo·-na·e), (het-hoh-tę·čyo·), (het-wakah-tenčyǫ·), cp. hetisah-tenčyǫ· *where you come from.*

-tha- (o?-tha-tka-thǫ?), cp. -tka-; (o·-tha-tha·-k), cp. -tha·-.

-tha? (ka-towe·-tha?), cp. -towe·-.

tha·- (tha·-ya-wę?).

-tha·- (te-ska-tha·-k), (tos-a·-tha·-k), (o·-tha-tha·-k), cp. tesha-tha·-k *he'll take a walk*, tosayǫ-tha·-k *she's ready to walk now*; (ha-tha·-e?ne?), cp. yǫ-tha·-e?ne? *she's walking*, ka-tha·-e?ne? *I'm walking.*

thehto·ǫ?(-) cp. thehto·ǫ?-shǫ?ǫ? *woodchucks.*

tho- (tho-tǫęshę·?), cp. -tǫęshę·?.
-thon- (heni-thon-e·inǫ?), cp. -e·inǫ?.
-thowe- (o?-thowe-nǫ·ę-k), cp. -nǫ·ę-.
-tho·- (o?-tho·e·it), cp. -e·it.
-thǫ? ~ -?ho? (wa·-tka-thǫ?), (o?-tha-tka-thǫ?), cp. -tka-; (ka-tka-thǫ?), (ne·-ti-ka-tka-?ho?).
-thǫ·te? (ho-thǫ·te?), (o·ne·-sho-thǫ·te?), cp. aka-thǫ·te? *I heard it*, sa-thǫ·te? *you heard it*, ko-thǫ·te? *she heard it*.
-ti- ~ -ti·- (wa·-ti-yǫ·-nǫ?), cp. -yǫ?; (ne·-ti-ka-tka-?ho?), cp. -tka-; (he-ti-nyošyo·t), (ne?-ti-nyošyo·t-ak), cp. -nyošyo·t(-); (wa·-ti·-yǫ?), cp. -yǫ?; (wao-ti·-ye·i?), cp. -e·i?.
-tiya·? (hǫsa·-tiya·?).
-ti?(-) (ka·-we-ti?-kwah), (wa·-o·-ta?-ti?), cp. (-)ta?(-); (nǫ?-o-waǫ-ti?).
-tka- ~ -tka?- (wa·-tka-thǫ?), (o?-tha-tka-thǫ?), (ę-hsa-tka-htǫ?), cp. etwa-tka-tho? *we looked at it*, o?twa-tka-hto? *it's looking around*; (ka-tka-thǫ?), (ne·-ti-ka-tka-?ho?), (o-nǫ-tka?-te?), (wo·-nǫ-tka?-te?), (ne?-ho-tka-ni·-yǫ·), cp. -yǫ·(-).
tokta·kǫ(-) (tokta·kǫ-kho?), cp. tokta·kǫ *black squirrel*.
tos- (tos-a·-tha·-k), cp. -tha·-.
-towe·- (ę-twa-towe·-hse·ik), cp. ęka-towe·-tha? *I'll hunt*, ęhsa-towe·-tha? *you'll hunt;* (ka-towe·-tha?).
-to·- (ka-to·-kę·s-hǫ·).
(-)to·kes (ta·-to·kes), cp. ta·-.
to·wo- (to·wo-nǫ·ę-hkwęh), cp. -nǫ·ę.
-tǫęshę·? (ho-tǫęshę·?), (tho-tǫęshę·?), (wa·-tǫęshę·?), cp. o?wa-tǫęshę·? *it took a rest*, o?ka-tǫęshę·? *I took a rest*.
-tǫkwe·i? (sa·-tǫkwe·i?), cp. sayǫ-tǫkwe·i? *she's getting better*, sawa-tǫkwe·i? *it's getting better*.
tǫt- (tǫt-iš-nye?-tǫ·ti?), cp. tǫtišsae?ta·ne? *there'll be some hollering*.
tǫta·- (tǫta·-ni-ya·wi?), cp. tǫta·-ye·a·wi? *she got it*.
-tǫ·(-) (waǫ-wǫ·-tǫ·), (wa·-waǫ-tǫ·-kho?), cp. (-)waǫ-.
-tǫ·ti? (tǫt-iš-nye?-tǫ·ti?), cp. tǫt-.
-twa- (ę-twa-towe·-hse·ik), cp. -towe·-; (ę-twa-hte·nti?), cp. -hte·nti?.
wa- (wa-hte·nti?), cp. -hte·nti?; (wa-te·-iskǫ·-tak), cp. -te·iskǫ·-.
-wa- (tas-hes-wa-snye·i?), cp. -šnye·i?; (ta·-wa-yǫ?), cp. -yǫ?; (ę-čyit-wa-s-ho·ni?), (ta·-ǫ-wa-yǫ?), (ta-shǫk-wa-te·-ny-e·it), cp. (-)shǫk-; (o?-wa-hsawę?), cp. o?-.
-wahat (waǫ-wahat).
-wahsǫ·ti·s (heni-wahsǫ·ti·s).
-wakah- (het-wakah-tenčyǫ·), cp. -tę·-čyo·(-).
wao- (wao-ti·-ye·i?), cp. -e·i?.
(-)waǫ- (waǫ-w-o·wi?), cp. -o·wi?; (waǫ-waha·t), (waǫ-wǫ·-tǫ·), (wa·-waǫ-tǫ·-kho?), cp. waǫ-?koyaǫtǫ· *he asked them*; (nǫ?-o-waǫ-ti?).
-waye?- ~ -wae? (i·-waye?-neh), cp. -neh; (i·-wae?).
-waye·i? (nǫ?-shǫk-waye·i?), cp. (-)shǫk-.
-wayętači? ~ wayętačye? (aki·-wayętači?), (aki·-wayętačye?), cp. hoti-wayętači? *they got news*.
-wa? (i·-ne?-wa?), cp. -neh.
wa?kwa- (wa?kwa-yǫ?), cp. -yǫ?.
wa?o·- ~ wa?o?- (wa?o·-hę·?), (wa?o?-kę·?).
wa·- (wa·-k-o·wi?), cp. -o·wi?; (wa·-čyeǫ-kwashǫ·), cp. -čyeǫ-; (wa·-k), (ta·-ne·?-wa·-k), (wa·-te-k-ho·ni?), (wa·-khwętа?), cp. -khwętа?; (wa·-a-čyę·), (wa·-čyę·), cp. -čyę·; (wa·-sho?ko?-kę·s), cp. wa·-sho?ko? *he bites it*, wa?ǫ-sho?ko? *she bites it*, o?ka-sho?ko? *I bit it*, o?sa-sho?ko? *you bit it*; (wa·-čye·no·ktę?), cp. wa?ǫ-čyę·no·ktę? *when I finished it*, o?ka-čye·no·ktę? *when I finished cleaning it*, o?sa-čye·no·ktę? *when you finished cleaning it*; (wa·-ę-nǫ-hte·nti?), cp. -hte·nti?; (wa·-ktanyǫ·), (wa·-čye·no·ktę?), cp. -čye·no·ktę?; (wa·-yǫ?), (wa·-ti·-yǫ?), cp. -yǫ?; (wa·-a-yǫ?), (wa·-et-č-yashę·?), cp. -yashę·?(-); (wa·-a-čhę?), cp. -čhę-; (wa·-kǫ·-kę?), cp. -kę?; (wa·-čę·-kwashǫ·), cp. -čę·-; (wa·-o·-ta?-ti?), cp. -ta?(-); (wa·-yo·?ktę?), cp. -yo·?ktę?; (wa·-tǫęshę·?), cp. -tǫęshę·?;

(wa·-tka-thǫ?), cp. -tka-; (wa·-wǫnyo?), (wa·-šnyot), cp. -šnye·it; (wa·-a-kę?), cp. -kę?; (wa·-wǫ·-yǫ?), cp. -yǫ?; (wa·-waǫ·-tǫ·-kho?), cp. (-)waǫ·; (wa·-ni·-yǫ?), (wa·-ti-yǫ·-nǫ?), cp. -yǫ?.

-wa·(-) (ha·-wa·-ye?), (o?-ši-wa·-ę?), cp. -ye?; (ne?-wa·).

-wa·e ~ -wa·e? (ǫ·kweh-wa·e), cp. (-)ǫ·-kweh(-), o?kno-wa·e? *I wash*; (ę-s-no-wa·e?), (o·-no-wa·e?), (ę-ǫ-ta-wa·e?), cp. ękno-wa·e? *I'll wash it off*, ęyęno-wa·e? *she'll wash it off*.

wa·?- (wa·?-čya?čye·inin), cp. -čya?čye·inin.

wa·?e- (wa·?e-ktanyǫ·).

we- (we·ni·-?čyǫ?), cp. -?čyǫ?.

-we- (ka·-we), (ka·-we·ti?-kwah).

-weno?se·kǫ? (tasa-o-weno?se·kǫ?), cp. tasa-.

-we·inishę· (ha?te-we·inishę·), cp. ha?te-wohse·inǫ *the middle*.

-we·nis- (heni-we·nis-he·i-s), cp. heni-we·-nis-hete? *day*.

-we·yę·? (te?-we·yę·?).

-wę?(-) nae-sa-ya?-ta-wę?), cp. -ta-; (ni-ya-wę?-ǫh), (tha·-ya-wę?).

-wiye? (te?-wiye?).

-wi·yoa·k (e-wi·yoa·k).

wo- ~ wo?- ~ wo·- (wo-ya?taę?he?), cp. -ya?taę?he?; (wo?-nikoeye·ntat), cp. -ni-koeye·ntat; (wo·-nǫ-tka?-te?).

wo·wǫ- (wo·wǫ-ęstę?), cp. -ęstę?.

-wǫ- (e-wǫ-hsawę?), cp. -hsawę?.

-wǫhse·nǫ? (ho-wǫhse·nǫ?).

-wǫkh- (te-wǫkh-e·it), cp. -e·it.

-wǫkha- (si·-wǫkha-nǫ·-kę·s), cp. ye·i-wǫ-kha-nǫ·kę·s *she heard it*, ni·-wǫkha-nǫ· *we two heard it*, twa·-wǫkha-kę·s *we all heard it*.

-wǫnyo? (wa·-wǫnyo?).

-wǫ·- (wa·-wǫ·-yǫ?), cp. -yǫ?; (waǫ-wǫ·-tǫ·).

-ya- (sha-ya-?ta·-t), (sha-ya-?ta·-t-shǫ?), cp. -?ka·-; (ni-ya-wę?-ǫh), (tha·-ya-wę?).

-yakę? ~ -ya·kę? (ta·-yakę?), cp. taye-yakę? *she came out*, tahš-yakę? *you came out;* (ho-sa·-ya·kę?), cp. -e·i?.

-yakwa- (te-yakwa-tawenye·i), cp. -tawe-nye·i.

-yanishet(-) (o?-yanishet), cp. e-yanishet-kho *a longer time*.

-yashę·?(-) (ha-yashę·?), (sa-č-yashę·?), (wa·-et-č-yashę·?), (sa-sa-č-yashę·?-shǫ·) cp. k-yashę·? *I'm lying*, wa·č-yashę·? *he lay down again;* (het-ha-yashę·?), (n-a-yashę·?).

-ya?- (nae-sa-ya?-ta-wę?), cp. -ta-.

-ya?taę?he? (wo-ya?taę?he?), cp. o?-ya?-taę?he? *it itself is sitting*, ǫk-ya?taę?he *I myself am sitting*.

-ya·kw- (he?-nǫta·-ya·kw-e·i?), cp. (-)nǫ-ta·-.

-ya·s(-) (ne?-ǫ-khi·-ya·s), (ka-ya·s-ǫ?), cp. khe·-ya·s-tha? *I call her*, ye-ya·s-ǫ? *she's called;* (š-ya·s-ǫ?).

-ya·wi? (tǫta·-ni-ya·wi?), cp. tǫta·-; (ši·-ya·wi?).

-ye- (ho-sa·-ye-n-e·i?), cp. -e·i?.

-yente·i? (ta·-yente·i?).

-yethiya?wętho? (e-yethiya?wętho?).

-ye? ~ -ę? (o?-ši-wa·-ę?), (ha·-wa·-ye?), (sa-k-ye?), (sa·-a-ye?), cp. wa·ti-ye? *they woke up*, sahš-ye? *you woke up*.

-yę (kęǫta-yę?), (he-kęǫta-yę?), cp. (-)kęǫ-ta-; (ta?a·-yę?-he·it), cp. (-)ta?a·-.

-yo- (te-yo-swe·nte?), (heti-yo-swe·nte?).

yoęnta- (yoęnta-kǫ·ǫ?), cp. yoęnta-?te? *the ground*.

-yokayę? (e-yokayę?).

-yo·hę? (e-yo·hę?).

-yo·?ktę (wa·-yo·?ktę?), cp. o?kyi-yo·?ktę? *I finished telling*, o?šyi-yo·?ktę? *you finished telling*.

-yǫknitha·? (e-yǫknitha·?).

-yǫkwaye·i? (e-yǫkwaye·i?).

-yǫ? ~ -yǫ·(-) ~ -yǫ·? (wa·-ni·-yǫ?), (wa·-ti-yǫ·-nǫ?), (wa·-yǫ?), (wa·-a-yǫ?), cp. ho?š-yǫ *you get there*, wa?ei-yǫ? *she gets there;* (sa·-ni·-yǫ?), (hǫ-sa·-yǫ?), (wa·-ti·-yǫ?), (wa?kwa-yǫ?), cp. k-yǫ? *I got there;* (ta·-wa-yǫ?), (wa·-wǫ·-yǫ?),

(ta·-ǫ-wa-yǫ?), (ne?-ho-tka-ni·-yǫ·), cp. wa·ni·-yǫ·-tę? *he hung it up*, o?kni-yǫ·-tę? *I hung it up;* (ehs-hih-šnyatka·-yǫ·), (heni·-yǫ·?), (ta·-ne?-ho-ni·-yǫ·), (ne?-ho-ni·-yǫ·), (ho-ni·-yǫ·).

-?ah (o?-ke·s-?ah), cp. heke·hkwa·-?ah *between noon and night.*

-?a·? (nye·-no?s-?a·?), cp. nye·-; (ho?-sha-ko·-?a·?), (o?-kę·nekwę?s-?a·?), (othwas-?a·?).

-?čyǫ? (we-ni-?čyǫ?), (he-hę-?čyǫ?), cp. ki-?čyǫ? *I was sitting around*, tehni-?čyǫ? *we two were sitting around*, tesni-?čyǫ? *you two were sitting around.*

-?ka·- (sha-?ka·-t), cp. s-ka·-t *one.*

-?non (ha-?non), cp. ye-?non *she's in*, ka-?-non *it's in.*

-?se·ik ~ -?se·k (ayakni-?se·k), cp. eyę-?-se·k *she'll be there*, ę·-?se·k *he'll be there;* (eya?kwe-?se·ik).

-?ta·- (sha-ya-?ta·-t), (sha-ya-?ta·-t-shǫ?), cp. -?ka·-.

GOAJIRO (ARAWAK) I: PHONOLOGY

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0. Introduction
1. Informants
2. Dialects
3. Descriptive phonology
4. Stress
5. Combinatory and historic phonology

0. In the summer of 1947 the author, who was up to then engaged in field studies among the Cuna Indians on the San Blas coast of Panama, resolved to benefit from an invitation by Dr. Duque Gómez, head of the Instituto Etnológico y Servicio de Arqueología in Bogotá, to take up linguistic research among Indian tribes in Colombia. According to the arrangement I could join a branch institute at Santa Marta (the Instituto Etnológico del Magdalena) under the directorship of Dr. Gerard Reichel-Dolmatoff. During my stay at his headquarters in the healthy coastland below the Sierra Nevada peaks in an attractive part of Colombia and enjoying lavish hospitality, I had ample opportunities for field trips in the company of my host. It was on this occasion that I first made the personal acquaintance of the Goajiro Indian. Later on in the summer, when Dr. Duque Gómez kindly asked me to join a combined ethnological and linguistic expedition to the Goajira peninsula, I gratefully accepted and began with interest to extend my newly started investigation into the Goajiro language.

The latter is now spoken in the greater part of the peninsula of the same name, in Colombian as well as in Venezuelan territory. Linguistically and ethnically perhaps the strongest native tribe in Colombia, the Goajiros are frequently seen even in cities like Rio Hacha and Maracaibo, where they come to trade and where their melodious language and picturesque costumes are noticed by visitors. Once bitter enemies of the whites, this fine and intelligent nation is now peaceable, but independent and somewhat reserved. One division of them, the Cosina (Goajiro kusi·na)—which perhaps only represents a clan (cf. below)—live in greater seclusion in the mountainous interior (the Serranía de Cosina, Goajiro u·či kusi·na).

The Goajiro are divided into clans or families (sometimes called castes),[1] for example the E'pinayu·, the E'piayu· (E·piayu·; cf. **3.9**), the Pušaina, the Hu·sayu·, the A·pšana, the Uraliu·, etc., which have their own chiefs. At the present time, the families are not located in any particular districts, and the authority of their chiefs appears to be limited. There are no communal houses or ceremonial centers. Although an intensified study most probably will reveal unexpected details, the individual in this tribe appears to be bound by few restrictions.

The principal settlements with which I came into direct or indirect contact are: Rio Hacha (Goajiro Si'čim·a (RO), mainly Colombian), Hato Nuevo (Ha·tanai), Fonseca (Honse·ka), Papayal (Ma'paya·l), Uribia (capital of the territory of Goajira, mainly Colombian), Maicao, Manaure (Akualu'uməī, locative form), Santa Cruz (Rilipimanaməī, loc.), Carrizal (Atom·əī, Hotom·əī, probably loc., Ka·raisira), Yuleng (Yəlaī), Cardón (Walirahoī), San José (Ulima'u), Bahía Honda (Sohaseməī, loc.), Puerto Estrella (Para·lialu'u, loc.), Cabo de Vela (Hepi·raməī, loc., E'pi·ra, Kau), Santa Ana, Nazaret (Wač·uali (RO), Mačuahə·lə (NC), Masale·, Masale, Iširu·məī, loc.), where I stayed most of the

[1] Cf. Rafael Celedon, Gramática, catecismo y confesionario de la lengua goajira (Collection linguistique américaine, tome 3), pp. 10, 11, and Introduction, pp. 23, 24.

time,[2] Jarara (Hala·la); (in Venezuela) Sinamaica, Maracaibo (Marakayaməĭ, loc., chiefly Venezuelan), El Mohán (Maha·na; near Maracaibo). (Notice the varying forms in the native place nomenclature.)

1. The following is a list of main informants: Manuel (Roberto?)[3] Ortiz (Goajiro Rupet·a A·pšanakaih), from Hato Nuevo (my chief informant for the western variety of Goajiro), abbreviated RO; Juan Bautista, from Cabo de Vela (JB); Noé Castillo, Nazaret (NC); Máximo Iguarán (of the E'piayu·), Nazaret (MI); Teodoro Silva, Nazaret (TS); Fray Juan, teacher at the Capuchin orphanage at Nazaret (FJ); Beatriz Iguarán (BI); Cenón, from Buenos Aires (Wawatui), near Nazaret (C); Ana Ofelia Ortiz, Nazaret (AO); Ana Isolina Ipuana, from Jarara (now living with Ana Ofelia and her sister; AI).

RO represents the western variety of Goajiro, the others mainly the eastern. AI speaks a dialect from the interior of the peninsula.

2. Dialects.

2.1. Goajiro is an Arawak language, most closely related to Arawak proper (Lukkunu, on the coast of British Guiana), of which there is a description with vocabularies and texts by de Goeje.[4] From these Arawaks the Goajiro live separated, once by the now extinct Caquetío of the Venezuelan coast, who were their neighbors, and nowadays by non-Indian settlements. Still the analogies between the languages of these two Arawak peoples are considerable.

2.2. The most notable dialectal difference within Goajiro coincides with a western and eastern subdivision, of which the former is characterized by the use of s- (š-) instead of h- in certain words, especially those with the non-masculine possessive prefix (see **7.12**),[5] but also in, for instance, polo·šikih· (west), polohiki· (east) *hundred*, etc. Parallel to this distinction runs a series of other morphological and lexicological differences, of which the following are instances (west form cited before east form): te'pia, tapuya (ta'puya)[6] *my house*; pinči, pi·č (NC) *house*; uših, ušuh *cooking pot*; to·la, hašič·i *male, man*.

2.3. Other distinctions have a different expansion. According to TS, the Venezuelans say yerə for erə *dog*, yerets for e·rets *dirty*, etc. AI uses the form waima for maima *many, much*, sa'u mi·čka for sa'u (ha'u) pi·čka(lə) *the door*, mo·la for mu·la *mule*, wop·uh for wo'puh *road*, etc. She also uses s- for h- in the words mentioned above (**2.2**). In some parts round about Uribia they say ant- for ent- *come* (e.g., anč pia *you have come*, JB), in others, aint-.[7] On the whole, however, all these distinctions are insignificant, and since the Goajiro travel a great deal on horseback, many speakers use various dialect forms indiscriminately.

2.4. According to RO, the dialect of the Cosina differs mainly in its drawling intonation, which he imitates by a singsong pronunciation, as in šia··ya··le··ya maka·laka tiyã (probably containing the words šiayale·ya *they* (or *you*, plural), mak·ala *earth*, tia *that*, in interrogation), said to mean *one must know of all*.

3. Descriptive phonology.

3.1. Of the dialectal variations just men-

[2] Sincere thanks are due to Father Camilo, at the Orfelinato de los Padres Capuchinos de Nazaret, himself a fluent speaker of Goajiro, for valuable assistance in the initial stages.

[3] The Indians are often known by different names in different places.

[4] The Arawak Language of Guiana, Verh. der kon. Akad. van Wetenschappen te Amsterdam, afd. Letterkunde, n.s., vol. 28, No. 2 (1928).

[5] The geographical limit is difficult to fix. At Santa Cruz, a little east of Uribia, I heard hulu' pi·čka *in the house* (with h-) as well as supuh *shoestring* (with s-).

[6] This form may in reality be identical with the preceding one; cf. pia·lahaĭ *thou buyest*, for *pua·lahaĭ, and Taino bohio, boi (de Goeje, op. cit., p. 229).

[7] Cf. Celedon éint- *venir* (op. cit., p. 95).

tioned, none seem to any extent to concern the phonology of the language, which therefore may be dealt with as a whole. There seem to exist only six fundamental vowels,[8] viz. a, e, i, o, u, and ə, and 11 consonants, viz. č (= English ch), h, k, l,[9] m, n, p, r, s, š (= English sh), t, w, and y (which latter are semivowels). The etymology of the language bears out that ts is rather a compound sound than an affricative. To be added to these fundamental sounds are two accessory elements, namely the pre-aspiration (marked by the Greek spiritus asper, ') and the glottal stop (marked by the Greek spiritus lenis, '); for the nasalization, see **3.5**. The former is like a rough h (or sometimes a weak Spanish jota), which neither can be separated syllabically from the following consonant—č, k, p, t—nor have any effect on the syllabic length (see **4.1**).[10] The glottal stop (') occurs chiefly between two vowels which do not form a diphthong; in initial or final position, as well as before a consonant, the glottal stop is usually suppressed in the pronunciation, even though the etymology of the word shows that it once existed (e.g., anuwa *canoe*, ta'anuwaĭ *my canoe*; **5.13** and **7.15** (1)). Sometimes it is also suppressed in unaccented position.

The semivowels, w and y, mainly occur initially and between vowels; in other cases they are changed into the vowels u and i, respectively. After k, however, w may occur, the sequence kwa differing clearly from kua.

3.2. Diphthongs are numerous; ai and au should especially be noticed, as they are undistinguishable from ei and ou (which latter are never used in this description). The latter values are, however, more common, and occasionally the final element is even dropped as in hoktai = hauktaik *wind*. The sequence ia (which is not properly a diphthong; cf. below) tends to become ie (as also ya often becomes ye; taya *I* is contracted either to ta· or te·); the combination wa often approaches wo (as in kasawoi = kasawayu *what?*) and takwo·m *my hat* often sounds, and may originally be, takwa·ma. Analogies to these phonetic details are found in the pronunciation of Spanish all along the Colombian seaboard. Also a'u is generally pronounced o'u, so that the adjective mulia'u *great* is commonly heard as mule'u. The first element in a diphthong always seems indifferent as to duration; nawane·-irua *the others*, for instance, is contracted to nawanairua,[11] and putũkire·-irua, *you shall put them to sleep*, to putũkirairua. It should be noticed that ia and ua (and in general combinations beginning with i and u, except ui) are not diphthongs in Goajiro, but count prosodically as two short vowels (cf. **4.1**, Note 20).

3.3. The values of the individual vowels are practically the same as in Spanish. Short a, however, is often more like English short u (ʊ), which sometimes makes the distinction between a and ə difficult. e, and especially o, are very open (ho·lu *now* is often like ha·lu). As for ə, it strikes me as being an unrounded frontal u (not unlike the front variety of Scottish Gaelic ao). Very roughly it may be equaled to French u or eu, but a phonemic differentiation between the latter two varieties does not seem possible.[12]

3.4. It is to be noticed that the vowel ə, like the others, may be either short or long

[8] In spite of Celedon, who gives seven at least (op. cit., p. 2).

[9] According to Celedon (op. cit., p. 5), there is no l-sound in Goajiro, and this author represents the middle consonant in pala· *sea* and haraih *five* in the same way (by r).

[10] RO pre-aspirates profusely. Sometimes I have noted pre-aspirated forms in his pronunciation which on other occasions were not so pronounced.

[11] Actually, I never heard anything but nawaneirua, but this form, in analogy with the one quoted next, must reasonably represent a phonetic variant (cf. above).

[12] For example, Celedon (op. cit., p. 2) notes the form tŏra *she, it*, which I definitely heard as tũra; the phonemic value, of course, is tərа.

(e.g., sə'təna *its wing*, e'kə·l *food*), vowel length being indicated by an inverted period, following the vowel sign. Thus many words are distinguished by the vowel length only, e.g., nuwala *his hair*, nu·wala *his brother*, huməĭ *for her*, hu·məĭ *her land* (FJ), terəĭ *I see*, te·rəĭ *my wife*, həsih (cf. **3.8**) *its tail*, həsi· *its flower*, etc. The vowel length is, however, often fluctuant. In monosyllabic words and in words of three or more syllables, a final vowel seems indifferent as to duration and never attracts the word accent: tə· ∼ tə *she, it*, hi·e·yu· ∼ hi·e·yu *women* (the long vowel is generalized in order to show that the final vowel cannot be elided; cf. **3.12**). Vowel length is not essential before h (polo·-hiki· > polohiki· *hundred*; also cf. paha from Spanish faja), neither, as a rule, when the vowel is nasalized. Before š and č, an i-glide is apt to develop, e.g., nohoiš, nohoiš = nohoš *there is not*; sometimes it is very marked, as in eišahaši = aišahaši = a·šahaši *speaking*.

3.5. All vowels may be nasalized, which will be marked by the Spanish tilde (˜) above the corresponding vowel sign. When word-final, the nasalization often evolves an offglide (ŋ) like the one heard in American Spanish (nación, etc.), and this is the rule when the nasalization occurs before k (cf. Spanish blanco). Nasalization may occur before any consonant: hītəih ∼ hintəih *boy*, wīpuməĭ ∼ wimpuməĭ *northward*, etc. As nasalized ə is very rare and nasalized əi very common, it might be suspected that they are variants of the same phoneme, but it will be safer at present to represent them as heard in each particular case. The word for *water*, wəĭ, more often sounds wī (ʸwiŋ, etc.).[13]

3.6. Regarding the consonants, attention should be paid to č, k, p, and t, which are not determined as to vocality, the voiceless quality as a rule prevailing. In Spanish words, however, voiced forms are occasionally heard, e.g., gune·a *banana*, Spanish guineo, or even asala ba'a (b = Spanish fricative b) *beef*, literally *cow meat*, from Spanish vaca, and this also happens in native words: binč *house* (RO) for pinč(i), biama *two* for piama, ya·š bia *thou art* for ya·š pia, etc., but these are clearly foreign to the system. s likewise is almost without exception voiceless. Stray voiced forms (z) do occur between vowels (e.g., (ha)muzəzã *what did you say?*) but lack all importance.

3.7. The sound of l is peculiar, being a kind of one-flap liquid, intermediate between Spanish ele and ere. Sometimes (and especially for those whose native language is Spanish) the distinction between l and r offers great difficulty (cf. **3.1**, Note 9). The r-sound, on the other hand, is moderately trilled and somewhat prolonged. The semivowels, w and y, which are mainly initial or intervocalic (see **3.1**) are like the corresponding sounds in English, with a marked tendency in the former to be pronounced like the Spanish gu- (i.e., ʸw); especially when occurring after a nasal the g-element is rather pronounced. RO also has dž for initial y in yəih *tobacco* and in some similar words. Although very common in many Indian languages, these details may to some extent be attributed to Spanish influence. As mentioned above (**3.1**), semivowels are vocalized if occurring in syllable-ending position, e.g., kau for ka·wa (from Spanish cabo), wo·liu for wo·li·wa *bolivar* (AO).[14]

Before initial u, a faint w is usually heard, e.g., (w)u·či *mountain*, (w)uših, (w)ušuh (cf. **2.2**) *cook-pot*, (w)u'či· *bird*, etc.

3.8. The other consonants have standard values (h as in English or American Spanish).

[13] Cf. Celedon: güín (op. cit., p. 126).

[14] Notice that Spanish b (v) becomes w in Goajiro (if in recent words), e.g., wate·ya (also pote·ya) *bottle* (from botella), tawa·k *tobacco* (from tabaco), etc.

Although in the local pronunciation of Spanish, h is added and dropped at discretion in front of vowels (e.g., hel = el, hayer = ayer (MI), hĕkontrara = encontrará, etc.), this is in no way the case in Goajiro. The aspirate (h) may occur initially in antevocalic position and between vowels (where, however, it is liable to become suppressed in rapid pronunciation) but is barely perceptible in word-final position, except in its effect on a preceding vowel (see **4.1**). All short, stressed final vowels in Goajiro appear to be followed by h, and by choosing h (whether distinctly heard or not) to express shortness of a preceding vowel, a convenient method will be found to express certain short diphthongs; əih, for example, is usually actualized as ə + a very short i (or y), likewise ih equals iy, as in the following words: taihtaĭ *I put*, pəihtaĭ *thou puttest*, ihpah *stone*, which are hence stressed on the last syllable. The aspiration is sometimes clearly perceptible, as in ihpah (RO), aih *night* (RO), yəih *tobacco* (C). For the origin of such syllables (which should be well distinguished from those containing a pre-aspirated stop), see **5.3**.

3.9. The glottal stop (') is not found initially or before a consonant and is weakened in word-final position(e.g., wunu, stressed on the last syllable, = unu' *tree*); cf. **3.1**. Hence su·lu'he· *from inside* becomes su·luhe·. For the suppression of the glottal stop in rapid pronunciation, see **3.1**; also cf. pato·la *ox, bull* = pa'ato·la *cow male* (or from Spanish vaca-toro).

The pre-aspiration, as in te'ki· *my head*,[15] is not used by many speakers, and it seems that the preceding vowel is then somewhat lengthened, e.g., e·ka·ka = e'kə·tka *food*, pie·ka = pia'ka *thou* (n), me·ke·ra, pe·ke·ra· (FJ) = me'ke·ra·, pe'ke·ra· (AO) *search for cattle*. Notice that the preaspiration never occurs initially: kəhama·la *tell me* (RO), as against pə'kəhama·la taməĭ, idem, or ta'kəhe·r *I will tell it* (RO).

[15] Cf. Celedon tejki (op. cit., p. 5).

3.10. Syllable-ending k, p, and t are implosive consonants (k, p, t), i.e., they are merely articulated, not pronounced, whence their occurrence often escapes the listener who is not used to them or prepared to find them. By suppression of a final short vowel (see **3.12**), a preceding plosive k turns into the corresponding implosive, as in ka'apu ~ ka'ap *long* (RO), tahap·u ~ tahap *my hand*. Normally, the implosives are not marked as such in the phonetic spelling. Even č may occasionally be reduced; cf. **5.3**, Note 28. A special form of (implosive) k appears before l in lakla *old*, alaklaš *chief*, which may sound either laɣla, laˀla, laiˀla, alaɣlaškaih (el caciqué, AO), alawlaš (MI).[16] Similarly, an original p (b) before l (< r), in ga·ᵘˀla (from Spanish cabra); with this form, cf. ga·blauta (= ka·plauta) *sheepskin* and li·bla (= li·pla) *book* (from Spanish libro). In karalauta *paper, book* (of unknown etymology, although the final part is probably -tah *skin*), the alternative forms garaləwta and karaləpta show that the last element of the diphthong represents an original implosive p.

3.11. All consonants, except the semivowels, h, r,[17] and the glottal stop, may be either short or long, the length being marked (as for the vowels) by the inverted period following the consonant. The long (or geminated) consonants only occur in intervocalic position and (if stops) consist of an implosive (see **3.10**) and explosive element. If a whispered final vowel (see **5.1**) is completely suppressed, a preceding stop is converted into an implosive (see **3.10**). There are examples of words being distinguished by gemination of a medial consonant only, such as taupuna *below me* and taupun·a *my face*.

3.12. Any word-final short vowel—sometimes also any short vowel before s, š, and č

[16] Cf. Celedon raurá, laurá *jefe* (op. cit.).

[17] The latter always seems somewhat prolonged (cf. **3.7**).

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—[18] are whispered and eventually suppressed. This is a peculiarity of all Indian languages in the coastal area of Colombia and Panama, being reflected in the pronunciation of Spanish as well (e.g., wahi·r *Goajiro* and *Goajira*, etc.). Concomitant with this process are certain changes in the consonant preceding the suppressed vowel, for which see further in the part dealing with combinatory and historic phonology (**5.3**).

4. Stress.

4.1. The word stress in Goajiro is altogether dependent on the nature of the syllable, from which follows that the same word may have two or more fully stressed syllables. The least stress (class 1) pertains to syllables in which the vowel is liable to become whispered (see **3.12**); notice that the final vowel in the combinations ia and ua (which are not diphthongs; see **3.2**) may similarly disappear (e.g., -iru for -irua, plural suffix; see **7.8**).[19] Every syllable containing a medial long or nasalized vowel or a diphthong,[20] or a vowel followed by a geminated consonant or a consonant group, is heavy and has main stress (class 4). Notice that the pre-aspiration does not produce syllabic length, as in te'ki· *my head*, i'či· *salt*, ta'če'(e) *my tongue*, which are all stressed on the last syllable (cf. **3.1**). Generally, end syllables terminated by a consonant (including h and the glottal stop) take precedence (class 3) of syllables terminated by a short vowel (class 2),[21] but a vowel followed by r, h, or the glottal stop (which are indeterminate; **3.11**) has relatively more stress (approximately class 3) than the others. Notice that the nasalization (except in the case mentioned above) has no effect on the syllabic stress. A final long vowel, which (according to **3.4**) is of indeterminate duration, does not cause end stress; hence, for example, ašəha· *paint, write*, a'kəha· *tell*, etc., are stressed on the middle vowel. A certain irregularity may, however, be found in this system, although of no great importance. It is especially worthy of notice that according to FJ and several others forms of the verb aukta· *die* is stressed on the first syllable, while aukta· (always with -aĭ; see **7.12** (2 a)) *kill* is stressed on the second syllable. Unless this depends on some analogy,[22] I am unable to explain its origin.

4.2. Words in which the syllables are all of the lower classes (1–3) are often indifferent as to syllabic stress. Examples of such words are: kasa *what?*, ta'u *my eye*, taya *I*, čira *he, that one*, təra (tra) *she, it, that one*, šiliwala *star(s)*, siruma *cloud*, si'ira *girdle*, hamususə *what did you say?*, hama'a *hammock*, pulahatu wəĭ *lagoon* (literally *the place of the water*; FJ), alihuna *Colombian, white man*, Apalaš (place name); the tendency still prevails in the ordinary pronunciation to suppress a final short vowel (see **3.12**). The forms ka'uši (m), ka'usu (n) *has got eyes*, which are occasionally pronounced with end stress by AO, should therefore be considered as emphatic (cf. **5.1**).

It is important to state that in words of the above type there is a marked tendency to stress the second vowel. According to this rule, the Spanish word gasolina, when syncopated according to **3.12**, tends to become

[18] There are also examples of a short vowel being dropped after n, which thereby becomes vocalic, e.g., npia = ni'pia *his house* (RO), nčə̆ = nə'čə̆, nu'čə̆ *his child* (RO).

[19] The frequent pronoun taya *I* is reduced either to tai, te· or ta· (cf. **3.2**).

[20] Notice that ia and ua are not prosodical diphthongs (**3.2**). Such words as te'pia *my house*, piama *two*, musia *the same* are thus stressed according to the rule in **4.2**.

[21] To this class evidently also belong syllables of the same type as the first syllable in ihpah *stone*, for which see **3.8**.

[22] Cf., for instance, auktəš·i -aĭ *kills* and auktəši (aukči) (*is*) *dead*. It should be mentioned that I have heard both accentuations in auktəčpa· *he died* and in some other forms. According to Celedon (op. cit., pp. 94, 122), aut- is *morir* and uta- *matar*.

kasolí, with the middle vowel relatively more stressed than the others. Such stress may even count prosodically as class 3 or 4.

4.3. In rapid pronunciation certain irregular reductions of the syllable length may occur. Thus, for instance, wane· *one* may become wane *a, an* (cf. **7.7**, **9.3**), and the preposition su·lu' *in it,* (*in* (see **23.2** (1)) may be shortened to sulu in sulu (w)ušik·al *in the pot* (RO).

5. Combinatory and historic phonology.

5.1. Owing to the fact that the short vowels are often reduced in quality when not spoken with full syllabic stress, it is many times difficult to ascertain their phonemic value. This is especially true of ə in unstressed positions, for most of the other vowels show a marked tendency to assume this value in such position. To determine the occurrence of the six fundamental vowels found in Goajiro a careful study of the pronunciation of good speakers is therefore required.

As already mentioned, final short vowels are usually voiceless (or whispered) in normal speech. But it does not happen always, and especially not when the final vowel is preceded by certain consonant groups, e.g., lakla *old* (lakla·, AI), sotpa *beach, bank, shore.* If preceded by a geminated consonant, on the other hand, the vowel may be unvoiced, as in anas·ə *good,* tahap·u *my hand* (cf. **3.11**). In careful pronunciation, the vowel is always fully voiced and even occasionally lengthened, e.g., alihuna· *stranger, white man* (= alihuna, alihun).[23]

5.2. By suppression of the voiceless final vowel, the preceding (single or geminated) consonant becomes final and is treated accordingly. Stop consonants (and certain others) are changed into implosives (cf. **3.10**); thus ta·nəka *my mouth* becomes ta·nək. Nasals are merged in the nasal quality of the preceding vowel; thus Aruamana *El Pájaro* (place name; RO) becomes Aruamã, etc.[24]

5.3. The following regular alternation between emphatic (distinct or slow-tempo) forms and normal (non-emphatic) forms thus arises in final syllables preceded by a vowel:

Emphatic	*Normal*
-ka, -ke, -ki, -ko, -ku, -kə -k·a, -k·e, -k·i, -k·o, -k·u, -k·ə	-k
-pa, -pe, -pi, -po, -pu, -pə -p·a, -p·e, -p·i, -p·o, -p·u, -p·ə	-p
-ta, -te, -to, -tu, -tə -t·a, -t·e, -t·o, -t·u, -t·ə	-t
-la, -le, -lo, -lu, -lə -ra, -re, -ro, -ru, -rə	-t (-l, -r, zero)[25]
-li (-ri?)	-ih[26]
-ma, -me, -mi (?), -mo, -mu, -mə -m·a, -m·e, -m·i (?), -m·o, -m·u, -m·ə	~ (nasalization)
-na, -ne, -no, -nu, -nə -n·a, -n·e, -n·o, -n·u, -n·ə	~ (nasalization)
-ni, -n·i (-mi, -m·i?)	-i[27]
-či, (-č·i)	-ih[28]

5.4. The evolution is not quite the same in word-final and anteconsonantic internal position. In the former case the reduction is less advanced (-l, -r, and -č often remaining). There are also cases of word-final -n instead of the nasalization, and on the whole intermediate forms are found to make a stray appearance.

In these circumstances it is very difficult

[23] The same rule holds for the local pronunciation of Spanish, in which the final vowel, if unaccented, is regularly treated as a short vowel in Goajiro (cf. **3.12**), but liable to be lengthened in emphatic pronunciation (e.g., oika· = oiga).

[24] Often with the same palatal offglide as in the Spanish limũ (= limu·na) *lemon*; cf. **3.5**.

[25] In medial anteconsonantic position -t prevails. The form samur (from samulu *turkey buzzard*) is from RO.

[26] After -i, only -h.

[27] After -i, only nasalization.

[28] E.g., sai(h) (from se·č) taya wat·a· *I come tomorrow* (RO).

to fix the phonemic value of every Goajiro word without an intimate knowledge of the language. It is often found that normal forms have ousted the emphatic form, which no longer remains in current use. For example, the plural of certain nominal stems in -l- (which was no doubt originally in -lina) is commonly reduced to (normal) -li instead of -lĩ, because the final nasalization often functions as emphasizing (cf. **5.5**). The form puet·aka *the door*, which is properly a normal form, has evidently been taken as emphatic and been further reduced to puet·-ak. The etymology of the word is the only means of ascertaining the original form.

5.5. There are many cases in which the emphatic form is characterized by nasalization of the final vowel. This probably arose in cases where (according to **5.4**) a normal form was taken to be the emphatic form. For, as it has been mentioned (**4.1**), a final nasal vowel falls in the same stress class as a non-nasal vowel and is therefore equally apt to be reduced as a non-nasal vowel. There are several instances of this, e.g., Ma'paya·lum for Ma'paya·luməĩ *to Papayal* (RO; cf. Note 29), ho·luč for ho·lučõ *just now* (Spanish ahorita). In this way an inorganic nasalization of a final vowel (whether short or long) has in many cases arisen in emphatic forms, of which the following examples may be quoted: anas·ə, anas·əĩ *good*, piamã *two*, apunĩ *three*, aiktus·ə̃ *it rained*, nohotsə̃ *I do not like it* (Spanish no me gusta), e·sə̃ *there is not*, wanaĩ, wanẽ (from wane· *one*, RO), auktsəĩ (for auktəsə *medicine woman*; AO), etc.[29] This tendency affects Spanish words as well, e.g., kohẽ or ˌkepẽ (RO) *coffee*, Nasarẽ *Nazaret*, etc.[30]

5.6. Another phonetic tendency arises from the indefinite quality of short, unstressed vowels, namely that of assimilation. Usually the first stressed vowel of the word defines the quality of the succeeding short vowels, especially if they are ə. Compare the following forms, in which the non-masculine suffix ends in -u after a preceding u, otherwise in -ə: auktəs·ə *she, it died*, matsas·ə *little* (n), hotus·u *it burned*, hutu·su *she, it fell*, etc., all according to TS. The article (**7.5**) often sounds -ko, -kono after stem-final -o or -u. Like Arawak proper, Goajiro has a great number of words in which the vowels are the same, e.g., horots *clear, bright*, sərəts *dirty*, -korolo *property* (see **7.18**), etc.

5.7. As pointed out above (**3.12**), the reduction of short vowels is not bound to the final position. Before or after a sibilant, or sound containing a sibilant (s, š, ts, č), and sometimes before a medial h, a short vowel often becomes voiceless and suppressed, e.g., skih for sikih *fire*, ščih for si'čih *river*, Pšaina for Pušaina (name of a clan), psəlha· for pusələha· *give me*, akamha· for aka·məha· (*to*) *smoke* (AO), akomhirama· for ako·məhirama· *give me a smoke*, etc.

5.8. In certain cases an original u has evidently been changed into ə, namely

(1) after s, as evidenced especially by the Spanish loanword sət·iha *ring* (from sortija). The Spanish o is practically always rendered by u in Goajiro (cf. **5.10**); hence the ə occurring in this word must depend on a special Goajiro phonetic tendency or law. In the same way one may explain the non-masculine possessive prefix sə- in the western dialects, as against hu- in the east, e.g., sə'pana unu' beside hu'pana unu' *the leaves of the tree*, or the non-masculine adjective suffix -sə, of which the masculine form is -ši, for in Arawak proper the non-masculine form usually ends in -u (-o), corresponding to masculine -i.[31]

(2) Between a labial and l, e.g., məlia'u

[29] Forms such as the latter, as well as Ma'paya·l (above) tend to show that no phonemic differentiation between ə̃ and əĩ is possible (cf. **3.5**).

[30] A similar tendency to nasalize final vowels in emphatic forms is also characteristical of Kaggaba.

[31] Cf. ifili (m), ifiro (n) *big*, etc. (de Goeje, op. cit., pp. 22, 57).

(often məle'u, mle'u, see **3.2**) for mulia'u *great*, -'pəla for -'pula *for*, or in the Spanish loanword puli·ka (puli·ku), pəli·ka (pəli·ku) *donkey* (from burrico).

(3) Often after t, as in tə (tə·), təra, təsa *she, it, this, that* (cf. Arawak toho, toraha, de Goeje, op. cit., p. 57).

(4) Before i in diphthongs, e.g., pəik·ala· *sit down* (imperative) for pu-ik·ala· (cf. aik·-ala· *(to) sit down*). On the other hand, ui may arise from original u·i, as in puika· *sell it* (imperative) for *pu-uika· (cf. oika· *(to) sell*).

In other cases there is reason to think that Goajiro ə corresponds to Arawak ə (represented ö, ü, etc., by de Goeje), e.g., ta'təna *my arm* (cf. Arawak dadöna; de Goeje, op. cit., p. 249). Finally, there are many examples in the verbal system that would bear out that ə may arise from a before an i in the following syllable, e.g., pirəni, pirəī *do you see?* (from ·ira- *see*).

5.9. Owing to the fact that different emphatic forms may coalesce in one normal form, it is not seldom found that secondary and incorrect forms are restored on the basis of more current normal forms. This is especially noticeable in Spanish loanwords. As we saw in **3.12**, the current wahi·r may represent either *Goajiro* or *Goajira*, whence it was always doubtful whether the form in -o or -a should be properly used in the emphatic forms. The Goajiro Indian appears to have preferred the a-form, as evidenced by the following words: puli·ka *donkey* (see **5.8** (2)), činčura *a kind of hammock* (chinchorro; BI), li·pla (li·bra) *book* (libro), sapa·ta *shoe* (zapato), Rupet·a *Roberto*; similarly one makes limu·na from limón (*lemon*) and ru·sa from arroz (*rice*). The same instability is often reflected in the consonant preceding the final short vowel. Since, for example, both -sə and -s·ə alternate with -s, one may find both anasə (RO) and anas·ə *good*, etc.

5.10. The fact that Spanish o (at least in early loanwords) is regularly represented by u in Goajiro (as also in Kaggaba and Cuna) seems to prove either that Spanish o was more narrow (resembling u) than the Goajiro o (cf. **3.3**) or that the Goajiro o is a recent product of earlier au. That this is so is borne out by such alternations in the verbal inflection as oika·, oikawa· *(to) sell*, toike·r *I will sell it*, puika· *sell it* (AO) for respectively a-uik-, ta-uik-, pu-uik-.[32] There is reason to think that in most cases e also arises from a diphthong (ai), as shown by such forms as terəī *I see* (for ta-ira-, from -ira- *see*). In such a case, however, the monophthongization must be dated earlier than the Spanish loanwords, in which the vowel e is always rendered by e in Goajiro. The diphthongs ai and au in present day Goajiro are, on the other hand, of later origin. It seems evident, for example, that a + i· is contracted to ai (e.g., air(a)hala *song*, beside pi·r(a)ha· *sing*, imperative) or from a· + i (as in certain plural forms in -airua; cf. **7.8** (2), **22.2** (2)); au may originate from a + u· (as in taulia *from me*, naulia *from them*; nu·lia *from him*, su·lia *from her*). When nasalized, au shows a strong tendency to become õ, e.g., ta'čõ (sometimes -'čoũ) *my son, child*, beside -'čauni (-'čouni, -'čo·ni) *children*. Also the long vowel in ho·lu *now*, noho momo·ləī *do not fear* sometimes alternates with au or ou.

5.11. The origin of the long vowels is threefold: (1) by contraction, e.g., -kali·rua (from -kali-irua; see **7.8**); (2) by fluctuation in final position, e.g., tə ~ tə· (see **3.4**); notice especially air(ə)ha· *sing* and air(ə)hala *sung*; (3) for emphasis, which often provokes superlength, e.g., wa··t·a- *very far* (from wat·a·s *far*).[33] In Spanish loanwords, stressed vowels in open syllables regularly become long in Goajiro, e.g., le·če *milk*

[32] The same holds for Cuna and Kaggaba, and the latter language still lacks an independent o-sound.

[33] Similarly in the local pronunciation of Spanish, e.g., ta··rde *very late*.

(leche), la·pika *pencil* (lápiz), tawa·k *tobacco* (tabaco), sapa·ta *shoe* (zapato; cf. **5.9**), mu·sa *cat* (cf. Chilean muza = gato); an exception is found when h follows the vowel (see **3.4**). Sometimes other vowels also appear as long, e.g., wo·li·wa *bolivar* (see **3.7**).

5.12. In the consonant system, one will first of all notice the apparent absence of t before i in Goajiro words (except in tia, tia, probably from *təya; see **10.3**). The fact that the masculine forms of the demonstrative pronoun tə, təra, təsa are respectively či, čira, čisa seem to furnish the explanation: as in Arawak proper[34] original ti became či. In Spanish words, however, ti is possible, which would show that the passage of ti to či occurred earlier than the acquisition of most Spanish loanwords. It would be tempting to assume an analogous passage of si to ši, supported by the parallel existence of -ši (m) and -sə (n) as common adjective suffixes (the genders being usually distinguished by the final vowel, which is -i in the masculine and -u, -ə in the non-masculine form). Further notice the use of š in the non-masculine possessive prefix when an i follows (e.g., ši'ki· *her, its head*, RO), whereas s is used in other cases (cf. **7.12**). But there are some words in Goajiro in which the combination si is found,[35] whence it is necessary to consider si and ši as different phonemes (as well as ti and či).

5.13. There can be little doubt about the earlier existence of two k-sounds in primitive Arawak, as reflected in Goajiro. As a rule Arawak k is unchanged in Goajiro (e.g., Arawak and Goajiro ka-, positive prefix; see **20.4**), but in a great number of words Arawak k is corresponded by the glottal stop in Goajiro, e.g., -lu'u *in* (Arawak o-loko; de Goeje, op. cit., p. 31), -a'u *on* (Arawak ako, aku *in*; ibid., p. 27), -a'u eye (Arawak akosi, akusi, in which -s(s)i is probably a (diminutive) suffix, cf. Island Carib acou, idem; see de Goeje, op. cit., pp. 30, 217). The change is evidently late in Goajiro, for certain Spanish loanwords partake of it: pa'a *cow, ox* (from vaca), wa'ama·ya *macaw* (from guacamaya, guacamayo), hama'a *hammock* (from hamaca; supposed to be of Arawak origin, although not used in Arawak proper); since voiced and voiceless stops are not differentiated in Goajiro, the same applies to Spanish g, e.g., la'una *lake* (from laguna).[36] In some words, however, k remains, e.g., hi·ka *string* (from jico, hico), tale·kačõ *little bag* (from talega), sikari·a *cigarette* (from cigarrillo), Honse·ka *Fonseca* (place name). The reason for the different representation is not obvious. It might be suggested provisionally that an anterior palatal (as after e, i in Spanish) remained, while a posterior variant (as after a, o, u in Spanish, but occurring independently in primitive Arawak) was changed into the glottal stop. This would suit the Spanish words quoted, although it must be considered that the latter may also represent a later borrowing into Goajiro.

5.14. In a few words the glottal stop appears in inflected forms only, e.g., ta'anuwəi *my canoe* (hence originally 'anuwa (**3.1**), cf. Spanish canoa; in de Goeje's collection from Arawak no similar word is found), ta'amaï *my horse* (AI; hence originally 'ama; cf. Arawak kama *tapir*, de Goeje, op. cit., p. 226), ta'uih (ta'ul, NC) *my foot* (cf. Arawak kuti, supposing that the stem is *ku-); perhaps also apunï *three* (cf. Arawak kabuin, idem; de Goeji, op. cit., p. 25), unu'u *tree* (cf.

[34] In most cases di seems to alternate with ji and ti with ci (= či) in de Goeje's lists (see op. cit., pp. 20, 24); there are, however, some words recorded with di, ti only.

[35] It might be possible to explain si from earlier sə, but I can find no positive proof of this.

[36] In this connection it may be mentioned that Spanish plátano (*plantain*) is borrowed into Goajiro as pla'ana. No parallel to this evolution can be found.

Arawak konoko *bush, jungle*), and aha- *burn* (cf. ta'ahaï *I burned*).[37]

5.15. The history of the Goajiro r-sounds is interesting, but owing to its complexity not traceable in all its details. The fact that both r and rr in early Spanish loanwords is rendered by l in Goajiro (cf. a·la *parrot*, Spanish ara, puli·ka *donkey*, Spanish burrico) lets us presume that the Goajiro r is a late product or in any case has a different origin. There are two special cases of r to be considered, viz. (1) r before l in a following syllable and (2) r after i, e.

(1) Although r may in reality occur in practically any position in Goajiro words, it is more frequent when an l occurs in a following syllable, e.g., warala *flame* (FJ), waralapai *sparrow hawk* (MI), -korolo *property* (see **7.18**), haraih *who?* (from harali, see **5.3**), haraih *five* (from harali), etc. There are strong reasons for thinking that r here represents a dissimilation product and that the the original form had an l. Cf. especially the interrogative stem hala- (e.g., halaši *where is?*) with the above-mentioned haraih *who?* (also Arawak alika *how?*, alikai *who?*, de Goeje, op. cit., p. 31).

(2) In most other cases r occurs after i or e, e.g., terəï *I see*, te·rəï *my wife*, ere *dog*, hi·e·r *woman*, etc. In this case one might reasonably suppose that the r-sound proceeds from an earlier y, which was dissimilated after i (e being a secondary product of ai; see **5.10**).[38] The sound change did not take place everywhere: notice, for example, such alternations as aïra· and aïha· (AI) *do*, or -irua and -iwa (plural suffix, e.g., humaiwa *with you*, AI), which probably depend on a dialectal difference.[39] The transition from y to r (if real) is, however, earlier than the Spanish loanwords, as evidenced by, for example, si·a *chair* (from silla); its early origin is also proved by such forms as hi·e·yu· *women*, in which it is added secondarily to e·. As seen from the table in **5.3**, the word-final reduction of r is the same as for l.

The r-sound sometimes occurs initially, e.g., rauya *mirror* (AO; cf. -ira- *see?*), rəih *knife* (probably from *ləli; cf. above (1) and **5.3**), and in the place name Rilipimana *Santa Cruz* (here perhaps also from l; cf. under (1).

5.16. The origin of the geminated consonants (which are č, k, m, n, p, s, š, t)[40] is without a doubt principally the contraction of original double consonants or of consonant groups, of which the first member is an implosive. (Parallels to this are found both in Kaggaba and Cuna.) This is clearly seen from such alternative forms as Ip·a ~ Ikpa· (place name), ap·ana ~ atpana *rabbit*, o·yən·əha· ~ o·yətnəha· *dance*, kač·isə ~ kalčisə *strong* (e.g., *of the wind*); in the last form I heard the l pronounced voiceless by an old man. Notice especially sət·iha *ring* (from Spanish sortija), in which the syllable-final r (according to **5.3**) became t, contracting with the following consonant.

5.17. The word-ending h produces gemination of a following form of the article (see **7.6**(3)), e.g., mah, mak·al *place*, ušuh, ušuk·al *cooking pot*, kaših, kašik·al *moon*, etc.; also cf. aip·a'a *night, evening* (from aih *night*), map·a'a *place* (from mah *earth*). As

[37] In this connection it might be mentioned that in Arawak proper an original k (of either type) is probably palatalized between two i's, e.g., isi *head*, cf. Goajiro -i·ki·, idem, Arawak mariši *maize*, Goajiro maik·i—RO asserts that maiši is used by Indians farther east; Arawak isiroko *meat*, Goajiro -i·iruku, idem (the latter with a different k-sound).

[38] In Quiché, for example, an original semivowel y (preserved in Maya) has evidently become r (e.g., rax *blue, green*, Maya (ya)yax), and this sound also corresponds to Maya l (e.g., Quiché rak, Maya lak *accompany*).

[39] In the case of -irua, a connection might be supposed with the plural suffix -yu·, so that the former would originally be -iyua. The only distinction made between these plural suffixes seems to be that the latter is usually found after a, o, u.

[40] ts always counts as long, and r is always somewhat sustained (cf. **3.7**, **4.1**); l never seems to occur long.

mentioned before (**3.8**), this h is usually very faint; we write it, however, in every word ending in a short, stressed vowel, which is not reduceable (according to **3.12**). The origin of the aspirate remains an unsolved problem; there is no indication of it found in de Goeje's material from Arawak. In some cases (e.g., kasa *what?*, kasah *thing*) there seems to exist an alternation between forms with and without -h.

5.18. The pre-aspiration (which is found before č, k, p, and t: see **3.1**) has no connection either with the intervocalic or word-final h, but seems rather to form part of the following consonant. Notice that the article (-'kaih, etc.) loses its pre-aspiration when added to a noun ending in -h (see **7.6** (3)). There is no foundation for the supposition that a pre-aspirated consonant might have arisen, like the geminated consonants, from an earlier consonant cluster. The only remaining alternative is to assume that the Goajiro pre-aspirated stops are independent sounds in their origin, but comparison with Arawak proper does not give much of a clue for their identification.[41] Pre-aspirated sounds neither occur initially (in a couple of cases, however, RO seems to use them with a supporting vowel) nor after a consonant. Hence ši'ki· *her head* alternates with ški· and si'čih *river*, with ščih. The pre-aspiration may, however, reappear after a final vowel in context, e.g., unu'u 'pana *tree leaf* (RO); cf. nu'pana *its leaf, leaves*. (But yəih-'pana *tobacco leaf* becomes yəip·ana (C) according to the above rule; **5.17**.)

5.18. In two words Goajiro h seems to correspond to Arawak k, viz. a'təha- *know* (if the same as Arawak adek-, adök- *see*) and ahap·u *hand* (cf. Arawak akabo, idem). It might be questioned whether Goajiro h in this case represents a pre-aspirated form of the k-sound which according to **5.13** is normally represented by the glottal stop.

Regarding the aspiration, it appears with great certainty that although h must be considered as an independent phoneme, it may nevertheless function as an accessory element in many forms, e.g., ha'unəš ta· *good-by* (literally *I go*; cf. a'unəš taya *I go*), hainči waya *we have arrived* (cf. aint(ə)ši *has, have come*). Cf. also **5.17**.

[41] The Goajiro verb -i'ka- *eat* evidently corresponds to Arawak eke, idem (de Goeje, op. cit., p. 26). In other cases, however, Goajiro pre-aspirated sounds appear as mediae in Arawak proper.

GLOSSARY OF ARAWAK NAMES IN NATURAL HISTORY

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The Arawak Indian language is an unwritten language which is fast dying out. It was thought that before this happened a record should be made of the names applied by the Arawaks to the local flora and fauna as it is largely these names or their derivatives which are in current usage in the colony. The Arawak vernacular names have been supplied mainly by Jonah Boyan who has been attached to the Forest Department since its inception and probably knows more of the forest fauna and flora than any other living person. The source of the material then is unimpeachable.

As Arawak is an unwritten language, the spelling of the vernacular names must of necessity be based on some phonetic system if it is to be intelligible to others. The author has followed the Royal Geographical Society's system, known as the R.G.S.II. While it is not claimed that this system represents the finer inflections, it does give a close approximation to the pronunciation. How closely the system approximates to the pronunciation depends however not so much on the system itself but on the listener who has to render the vernacular into the phonetic spelling. Most of the vernacular names are straightforward and no difficulty is encountered in their spelling. In a few cases however it was found that as many as three spelling variants all approximated to the Arawak pronunciation. In such cases an arbitrary decision had to be made as to the variant to be used.

The R.G.S.II system is based on the following features: (I) vowels are pronounced as in Italian and consonants as in English; (II) every letter is pronounced and no letter is redundant.

Accents are only used for stress, where otherwise the word might be pronounced incorrectly. The tilde symbol (˜) is used to represent nasal n, as in maporokõ, tauarãru. Doubling of consonants to indicate shortening of the preceding vowel is to be avoided under the system. Unfortunately certain well known Arawak tree names and the suffix -balli have always been spelled with a double consonant and it is felt that these should be retained as nomina conservanda. A list of these conserved names follows: balli, baromalli, hatti, kabukalli, kakaralli, labba, manni, wallaba.

As far as possible the meaning of the vernacular names or the reason why a plant or animal is so called has been given. In some cases the meaning is lost in the mists of antiquity.

The author has endeavored to give the most up-to-date scientific names for the fauna and flora, generic names only where the vernacular applies to more than one species or the specific name is not known, specific where the vernacular applies to one species only. The scientific names have been taken from the following sources.

Plants: Forest Dept. check list based on identifications by Kew.

Birds: Peter's Birds of the World and Chubb's Birds of British Guiana.

Animals: Notes by Beebe and Roth's Animals of British Guiana.

Fishes: Roth's Fishes of British Guiana based on Eigenmann's Fishes of British Guiana.

Insects: Notes by Beebe and Cleare of the Agriculture Department of British Guiana.

Snakes: Beebe.

It must be borne in mind that the Arawak Indians have applied these names over the centuries to the flora and fauna with which they are familiar, i.e. the flora and fauna of the area in which their reservations are at the

present day. This comprises the North West and North Central districts of the Colony. As a result the scientific names belong to the species found in this area. The point applies more to plants than animals as the former tend to have a more restricted distribution.

abo (ahabo) *backbone, back*; aboho *backbone from the triangular stem, vine with jagged leaves and winged fruit* (Serjanea paucidentata); abonoro *blue bunduri or bunuri crab of the N.W. district*; abuya *collared peccary, smaller wild pig* (Tagassu pecari); abuya-böko-löko *abuya-lap, rope with white flowers and red fruit* (Paullinia rufescens); abuya-mibia *abuya's mibi, tough pliable rope used for cordage* (Barnhartia floribunda); abuya-taitai *noise of abuya tusks clashing from the call of the rufous-winged ground cuckoo* (Neomorphus rufipennis); ada *tree;* adaba *tree-frog with loud, grunting voice;* ada-jike *tree-ear, a bracket fungus*; ada-lokehe *something inside a tree*; *black wasp which nests in holes in trees*; ada-tima *tree-beard, old man's beard, tree moss* (Tillandsia usneoides); adaurona *sand baromalli trees* (Catostemma spp); adebero *undergrowth tree with yellow flowers and trigonal fruit* (Paypayrola longifolia); adebero-kili *adebero-place, heavy forest in which adebero grows*; aderi *red ground dove* (Oreopeleia montana); adubuna *tree-leaf corrupted from ada-bana*; adubuna-se *inhabitant of tree-leaves, black, solitary ant which lives among dead leaves*; adühürü *sound of file rasping on wood, cicada from the note*; aharo *wild pine, epiphytic plants resembling pineapple* (Aechmea spp); aharokõ *governor*; aiaiya *roseate spoonbill* (Ajacis roseata); aimarero *scissor tail kite* (*Elanoides f. forficatus*); aiomora *haimara, fresh water siluroid fish* (Hoplias malabaricus); aiomora-da *haimara-scale from the rounded leaves, small prostrate herb* (Vandellia diffusa); aiomora-dan *haimara-tree*; *large, buttressed tree with creamy flowers* (Parinari excelsa); aiomora-kushi *haimara-eye from the reddish fruit, tree with white latex* (Pouteria cladantha); aiomor(a)-aria *haimaralli snake, water labbaria* (Helicops angulata); akaka *wound, pain, hurt*; akaka-ferobero *hurt-big as a result of the snake's bite*; *bushmaster* (Lachesis muta); akárako *undergrowth tree with small, long pointed leaves* (Marlierea schomburgkiana); akhara *black forest crab*; akhara-mibia *crab-mibi from resemblance to true mibi, epiphytic plant* (Rhodospatha venosa); akhorá *forest ground frog*; akhorakali *thunder*; akhorakali-dan *thunder-tree from its habit, epiphytic tree which grows taller than its host* (Cosmibuena triflora); akhorakali-oyu *thunder-mother, mantis*; akuyado *red-breasted marsh bird, robin* (Leistes m. militaris); akuyári *red cedar* (Cedrela odorata); akúyuru *tall spiny palm with edible fruit* (Astrocaryum tucuma); akwároko *"young gal bubi" marabunta which makes a nest shaped like a girl's breast*; alaso *flat-shelled creek turtle* (Platemys platycephala); alaso-abo *turtle-back from the shape of the fruit*; *swamp fukadi from the shape of the biconvex fruit* (Terminalia dichotoma); aleti *lamp from its use as a torch*; *low strict savanna shrub* (Casearia silvestris); alikyu *low creek and riverside tree with pink feathery flowers along the stem* (Pithecellobium cauliflorum); amuri *larger kind of crucifix fish* (Sciadeichthys proops); anáreke *karatas fibre*; *spike-leaved plant resembling pineapple* (Bromelia karatas); anorá *cocoi heron* (Ardea cocoi); anwana *turkey vulture, bush carrion crow* (Cathartes spp.); anwana-aharokõ *carrion crow governor from its habit, king vulture* (Sarcoramphus papa); anwana-eherõ *carrion crow-stink gland, black beetle which emits a noxious smell*; arabaio *flat black aquatic frog*; araia *spider*; araka *species of nightjar which sighs resoundingly*; arakabosa *gun from the spanish*; arakabosa-daia *gun-handle from the nest shape, wasp which makes a grey nest shaped like a gunstock*; aranso *orange from the spanish*; arapaiko *black-collared hawk* (Busarellus n. nigricollis); arára *small soft-wooded trees with greenish flowers* (Bocageopsis, Unonopsis and Guatteria spp.); arará *termite, white ant, wood ant*; árara *cayman* (Caiman niger); arero *ite parrot, red bellied macaw* (Orthopsittaca manilata); aria *snake*; arika-

dako *medium-sized second growth tree with leaves brown-felted beneath* (Byrsonima aerugo); arikako *musical wren, quadrille bird* (Leucolepis arada); arin *expert, one who knows*; arisauro *medium-sized tree with showy purple flowers and large green buoyant pods* (Vatairea guianensis); aromata *medium-sized tree with pink flowers and legume smell* (Clathrotropis spp.); aroro *porcupine* (Coendou prehensile, C. melanurus); aroro-dan *porcupine-tree from the spiny fruit, medium sized strongly buttressed tree* (Sloanea sp.); arua *tiger*; arua-dan *tiger-tree from the tiger markings sometimes seen on the high plank buttresses*; *medium sized trees* (Sloanea spp.); arua-kabo *tiger-paw from the pendent flower corymb*; *ropes with green flowers and scarlet fruit* (Marcgravia spp.); arua-kaiaban *tiger fleas, kind of black ant*; arua-kushi *tiger-eye from the wing markings, cayenne ant creeper* (Myrmoderus ferrugineus); arua-likin *tiger's pet bird, kind of tanager* (Tangara sp.); arua-shi *tiger-head, small black wasp which makes a nest something like a tiger's head*; aruate *tiger, specific epithet*; arukwa *something always cut*; arukwa-shiru *head always cut from the whitish collar of the snake* (Pseudoboa coronata); asa *hassar, toe-nail fish* (Hoplosternum littorale); asa-jike *hassar-ear from the shape of the pinnae, terrestrial fern* (Blechnum indicum); asa-shi *hassar-head from the fruit, small trees with yellow latex and yellow edible fruit* (Rheedia spp.); asashikiri *smaller kind of hassar* (*Hoplosternum sp.*); asáwako *mocking bird* (Cacicus c. cela); asepoko *medium-sized red-barked tree with white latex and edible fruit* (Pouteria guianensis); asepoko-balli *asepoko from the general resemblance, medium-sized trees with white latex* (Pouteria spp.); auka *short*; aukatala *short jaw-bone, kind of pirai fish with shortened underjaw* (Pygopristis sp.); auli *smaller kind of cuffum or tarpon* (Tarpon sp.); aumana *growing in clumps, tufted*; aumanabana *clumped-leaf from the habit, plant of moist ground with broad-bladed leaves* (Monotagma parkeri); auribana *small kind of dogfish* (Acestrorhynchus sp.); auyama *pumpkin* (Cucurbita pepo); auyari *coastal crab with equi-sized large claws*; awara *small spiny palm growing in clumps* (Astrocaryum tucumoides); awasokule *stilt-rooted undergrowth trees with yellow latex* (Tovomita spp.); awati *medium-sized tree with tiny leaves and insignificant flowers* (Maprounea guianensis).

bada (obada-hü) *nail, claw*; badakasai *woody savanna plant with showy mauve flowers* (Tibouchina aspera); baiabo *centipede*; baiakana *canna, garden plant* (Canna indica); baiara *sawfish, combfish* (Pristis sp.); baiara *fish of salmon type* (Hydrolycus scomberoides); bajiri *common type of worm*; baka *cow*; bakufa *banana* (Musa sapientum); balli (oballi) *like, similar*; bana (obana) *leaf*; banara *leaves*; banya *deeply fluted tree with very hard purple-black heartwood* (Swartzia bannia); banya-balli *banya from the very hard wood, medium-sized trees with white flowers* (Eugenia spp.); bará *sea, ocean, wave*; bara *kind of patwa fish*; barabara *small to medium-sized trees with charcoal-like outer bark* (Lissocarpa guianensis, Diospyros spp.); bará-dan *ocean-tree because light canoes are made from the silverballi-like wood* (Ocotea tomentella); barakāro *large black worm used as fish bait*; barakaro *medium-sized trees with glossy red and black seeds, called jumbi beans* (Ormosia spp.); barakata *smallest kind of armadillo* (Dasypus kappleri); bará-kodokodo *sea-mole cricket from habit and habitat, greenish striped fly which digs in sand by the seashore*; barámadükŭro *one who never sees the sea*; *kind of Pompelid wasp*; bararo(obararo) *hair, fur*; barata-balli *barata from the general resemblance, medium sized tree with white latex and edible yellow fruit* (Ecclinusa sanguinolenta); barata *undergrowth tree of white sand forest with white latex* (Ecclinusa psilophylla); barati *negro*; barati-jike *negro-ear from the shape; dark brown, cup-shaped bracket fungus* (Auricularia sp.); baremo *great ant-eater or ant bear* (Myrmecophaga tridactyla); bareshi *dusky parrot* (Pionus fuscus); bariri *hawk*; bariri-kuti *hawk-foot from the regular whorled branching, swizzle-stick tree* (Mabea piriri); baro *axe*; baro-daia *axe-handle from the length*

and shape of the fish, largest kind of dog fish (Acestrorhynchus sp.); baromalli *large soft-wooded cylindrical trees with orange woody fruit* (Catostemma sp.); barorobata *narrow ribbon-like fish like oradiro* (Eigenmannia); barta-balli *corrupted form of barata-balli, medium sized tree with white latex and lobed fruit* (Ecclinusa guianensis); baruda *comb*; baruda-balli *a comb from the spiny fruit, buttercup, rope with showy yellow flowers* (Allamanda cathartica), *rope with large oblong spiny fruit* (Pithecoctenium echinatum); bashya *butterfish, bungo mary* (Plagioscon auratus); bayauya *bat falcon* (Falco a. albigularis); bele *soft*; bele-lua *soft belly from the absence of scales on the belly, kind of flat-headed hassar*; bele-tika *black puff-bird* (Monasa niger); bero *many of one kind* (suffix); beyoka *musical instrument*; beyu *red savanna deer* (Odocoileus gymnotis); bianda *paired, in twos*; biauro *rope with red milk and red papilionate flowers*; bibiri *dragon fly*; bibíro *greenheart tree* (Ocotea rodiaei); bime (ibime) *pepper*; bímiti *humming bird*; bímiti-tokon *humming bird-fruit, vine with scarlet passion flowers attractive to humming birds* (Passiflora glandulosa); bímiti-wallaban *humming bird-wallaba, small tree with pendent bunches of scarlet flowers attractive to humming birds* (Brownea latifolia); bina (ibina-hü) *medicine, charm*; bina *fleshy Arum-like plant with sagittate leaves used as a good luck charm* (Caladium bicolor); bioro *bizzi-bizzi, rushes of moist places* (Eleocharis spp.); birokolás *white-headed manakin* (Pipra leucocilla), *parson bird, white-headed marsh tyrant* (Arundinicola leucocephala); bisa *bearded sackie-winkie monkey* (Pithecia satanas); bisoloma *string bean* (Phaseolus vulgaris); boba *small stilt-rooted palm with lobed leaves* (Socratea exorrhiza); bobóro *jumbi bubby, prickly shrubs with red poisonous fruit* (Solanum spp.); bobóro-balli *bobóro from the prickly fruits* (see ruri); bodali *baking pan*; bodali-he *like a baking pan, large brown wasp which builds a flat circular nest*; bohori *bat*; bohori-bada *bat-claw from the recurved spines, ropes with small papilionate flowers* (Machaerium spp.); bohori-koyaha *bat-spirit from the shape, sea bat, giant ray* (Manta birostris); bokechi *elder brother*; bökili *fish of the kashi type*; bokoboko *venezuelan horned owl* (Bubo virginianus scotinus); bokoboko-tokõ *owl-fruit, shrubs or trees with pink or purple flowers and fleshy black fruit* (Hirtella spp.); bokolauro *green trogon* (Trogon s. strigilatus); bokoromana *large oblong type of chili pepper* (Capsicum frutescens); bokorona *epiphytic plant of which the aerial roots are used for cordage* (Aroideae); bokorori *green cacique, forest bunya* (Ostinops v. viridis); bolokaro *upside down, pimpla yam, hard yam* (Dioscorea trifida); bona(obona-hü) *bone*; borótobõ *breadnut* (Artocarpus incisa); borótobõ-mashibero *breadnut without seed, breadfruit* (Artocarpus incisa); bosoli *sweet cassava* (Manihot utilissima); botoba *widow*; botoba *pale green or yellow Tabanid fly*; boyari *poisonous vine with large peltate leaves and snake-like flowers* (Aristolochia daemonioxia); buidado *varied flycatcher* (Empidonomus varius rufinus); bukaikiti *white-faced or wicissi duck* (Dendrocygna viduata); böko (oböku-hü) *thigh*; böko-löko *thighs of a person, a person's lap*; bu'tata *red-headed caracara hawk* (Daptrius a. americanus); bultata-kubia *bultata-eye lotion, rope with pink fleshy flowers* (Schlegelia violacea); bultero *caica parrot* (Eucinetus caica); bumbum *singing catfish* (Doras granulosus); bunya *yellow cacique* (Ostinops d. decumanus); bunyahe *bunya from the yellow abdomen of a wasp which builds a small round nest*; bunya-shiri *bunya-beak from the pale colored spines of a small clumped palm* (Bactris trichospatha); buraburáro *braubrau frog of riversides*; búrada *large heavily buttressed trees with creamy flowers and greenish fruit* (Parinari spp.); burádi *red-billed toucan or bill bird* Ramphastos monilis); burádi-ye *buraditongue, small kind of silverballi tree* (Nectandra grandis); burará *white-necked drake* (Porzana albicollis typhoeca); buri *bat* (corruption of bohori), *shrub with round paired fruits beloved of bats* (Bonafousia undulata); buríko *donkey from the spanish*; burishiri

honorary title for the best marksman of the tribe, black tiger-head wasps which build a barrel shaped nest and never miss their aim when attacking; bürü *striped, printed, lettered*; buruburuli *medium-sized buttressed trees with crimson sap and brittle wood* (Licania spp.); burue *bullet-wood tree* (Manilkara bidentata); burue-balli *bullet-wood from the leaf shape, small understorey tree* (Hieronyma oblonga); bürü-koro-koba *one of a kind with lettered heart, letterwood tree* (Piratinera guianensis); buruma *soft-wooded tree with peltate leaves, grey beneath* (Pourouma guianensis); buteri *tiny scale-fish which sucks mud, mudfish.*

da(üda) *fishscale*; daia(üdaia) *handle, stem, stock*; dakama *tall tree growing gregariously on white sand* (Dimorphandra conjugata); dakama-balli *dakama from the leaves, riparian tree with showy white flowers and round green buoyant fruit* (Aldina insignis); dakara *small shrubby tree with clusters of white flowers* (Rapanea guianensis); dalli *large soft-wooded strongly-buttressed swamp or hill tree with nutmeg-like fruit* (Virola melinonii; V. surinamensis); dan(üdan) *tree*; dara *white bell bird* (Procnias alba); dara-shiri *bell bird-beak from the black triangular seeds, low tufted savanna sedges* (Lagenocarpus spp.); dare *fish of perch type* (Leporinus sp.); darina *large buttressed deciduous tree with pink flowers and membranous pods* (Hymenolobium sp.); dawalo *fresh-water catfish* (Hypothalmus edentatus); dawaradokuri *yellow oriole, plantain bird* (Icterus x. xanthornis); dhale(dahale) *flange, buttress*; dhale-bana *flange-leaf from the shape of the leaf, low smooth jointed palm* (Geonoma paniculigera); dobori *sting ray*; dobori-banaro *sting ray-leaves, cow hoof, tall plant with broad peltate leaves* (Piper peltatum); dobori-yurite *sting ray-tobacco, crabgrass* (Sporobolus virginicus); dodole *white-lipped peccary* (Tagassu tajacu); dokochi *grandfather*; dondonle *kind of red rat*; dorobana *epiphytic plant with fleshy sagittate leaves* (Anthurium hookeri); dorodoro *small kind of bashya* (Nebris sp.); dorokapa *tiger bird, pinnated bittern* (Botaurus p. pinnatus); dorokwaro *guiana partridge* (Odontophorus g. guianensis); dorokwaro-bariria *partridge-hawk because it whistles like a young dorokwaro, pearl kite* (Gampsonyx swainsoni leonae); dorokwaro-yuruwan *partridge-thorn, barbed vines with white flowers and scarlet berries*' (Smilax spp.); duka *medium-sized soft-wooded trees with creamy flowers and purple-black berries* (Tapirira marchandii); dukali *large soft-wooded tree with white latex and large, round, edible fruit* (Parahancornia amapá); dukali-balli *dukali from a close general resemblance, satinwood* (Brosimum paräense); dukuria *medium-sized trees with insignificant flowers and woody oval fruit* (Sacoglottis spp.); duli *negro*; duli-jike *negro ear from shape of the fungus* (see barati-jike); duria *sandpiper, snipe* (Limicolines); duru *large softwood tree with greenish flowers which resemble Apeiba* (Anona symphyocarpa); duru *large softwood tree with tuberculated or spiny fruit* (Apeiba spp.); dürüdürü *lake alligator* (Caiman sp.); dwada *cooking pot.*

emeshi *coushi ant nymph* (Atta spp.); emeshi bariria *emeshi-hawk because it feeds on flying ants, plumbeous kite* (Ictinia plumbea).

faifaiya *greenheart bird, grey piha* (Lipaugus cinerascens); faifaiya-noroko *faifaiya-mouth from the color of the bark, reddish-yellow rope used for poisoning fish* (Lonchocarpus riparifolorus); ferobero *big kind*; fiso *sardine, flying fish*; fiti *cuckoo type*; fudi *red-bellied sackie monkey* (Pithecia pithecia); fukadi *medium to large strongly buttressed trees with white flower spikes and winged fruit* (Terminalia and Buchenavia spp.); fükü *black ant which makes an elliptical nest against tree trunks* (Azteca sp.); furilia *black mangrove* (Laguncularia racemosa); futi *tree cricket*; futui *soft-wooded tree with showy lilac purple flowers* (Jacaranda copaia); futulili *yellow-breasted king-bird* (Tyrannus melancholicus despotes).

hababaro *large kind of forest cockroach*; hachi *pepper*; hachi-balli *pepper from the smell*

of the seeds, small soft-wooded trees (Pera spp. Simaba spp.); hadorenaro *kind of fly*; haduri *small aguti* (Myoprocta acouchy); hadürükürü *small kind of yakman ant* (Eciton sp.); haiahaia *wild rubber, sapium rubber* (Sapium spp. Lacmellea utilis); haiaku *black-brown fresh-water crab with scalloped shell*; haiari *rope with strong legume scent, used as a fish poison* (Lonchocarpus martyni); haiari-balli *haiari from the scent, large soft-wooded trees with waxen flowers* (Alexa spp.); haiawa *incense trees supplying haiawa gum* (Protium spp.); haiawa-balli *haiawa from the general resemblance, larger incense trees* (Protium neglectum, Tetragastris spp.), *low herb with aromatic roots like haiawa* (Melampodium camphoratum); haio *kind of black ant which nests in open places*; haka *guiana marten, grison* (Tayra barbara); haka-aruate *haka-tiger from the coloration, jaguarondi* (Felis jaguarondi); hako *mortar for pounding food*; hako-rechi *mortar-husband, pestle*; haküya *large deciduous trees with showy yellow flowers* (Tabeuia sp.); haküya-balli *haküya from the general resemblance, trees with showy violet-purple flowers* (Vitex spp.); halakwa *hole, opening*; halakwa-bana *leaf with holes from the leaves, fleshy epiphytic plant* (Monstera pertusa); halchi(halichi) *potato*; halchi-balli *potato from the fruit, tree with white latex and soft yellow fruit* (Pouteria sp.), *vine with showy mauve flowers* (Ipomoea phillomega); hanoba *deer fly, light brown Tabanid fly*; harakuli *smallest kind of coushi ant* (Atta octospina); harata *smallest kind of yarau fish* (Erythrinus sp.); harawa *grey-green patwa fish with black stripe across the head*; hariraro *white*; hariraro-shirua-balli *white silverballi from the color of the wood* (Ocotea canaliculata); hariti *wild bananas* (Heliconia spp.); haro *starch*; haro-banaro *starchy-leaves from the grey pubescence, woody herbs* (Waltheria americana); harahara *wood-louse*; hashiru *otter, water-dog* (Pteroneura brasiliensis); hashiru-kabo *otter-paw from the spreading fronds, club moss* (Selaginella spp.); hatti *wild rubber-tree* (Hevea spp.); hau *three-toed sloth* (Bradypus tridactylus); hau-bariria *sloth hawk, harpy eagle* (Harpia harpyja); hau-dan *sloth tree, kind of kakaralli* (Eschweilera spp.); haurere *yakman or army ant* (Eciton burchelli); haurere-oyo *yakman ant-rump from the birds' habit, antwrens which follow the army ant columns* (Pithys a. albifrons and Gymnopithys rufigula); hebechi *old man*; hebechi-weraka *old man's apron, kind of black patwa fish*; hebesere *athlete's foot disease*; hebesere-bina *hebesere medicine from the plant's use in curing athlete's foot disease* (see waiuri-balli); henauya *paradise jacamar* (Urogalba d. dea); henauya-dokochi *jacamar-grandfather from the family likeness, common jacamar* (Galbula galbula); hendereke *moonlight yaware* (Didelphis marsupialis); henwana *termite nymph*; hero *small second-growth tree with a scent like an anteater*; herõ(eherõ) *stink gland*; hi(ihi) *tail*; hiahia *hawk-headed parrot* (Deroptyus accipitrinus); hiari *small tree reputed to be very poisonous*; hibibiru *lavender jay* (Cyanocorax cayanus); hibiso *weevil*; hicha *savanna shrub or large tree with yellow flowers* (Byrsonima spicata); hichi *powis* (Crax nigra); hichi-bokechi *powis-elder brother in humourous reference to its tiny size, helmeted pygmy tyrant* (Coleopteryx galeatus); hichu *wild cherry tree* (Eugenia patrisii); hikanori *baby birds, foolish birds* (Coccyzus spp.); hikaruana *bright red-brown cuckoos* (Piaya and Coccycua spp.); hikihi *fire*; hikihi-likin *fire-bird* (Phoenicocercus carnifex); hikuri *land tortoise, terrapin* (Testudo denticulata) hikuri-beyoka *tortoise-music in humourous reference to its train-like whistle, white-banded wren* (Microcerulus bambla); hikuri-bianda *tortoise-pair from the habit of the tree to grow in pairs, small tree with tufted crown* (Toulicia spp.), *butterwood from the general resemblance* (Simaba cedron); hikuri-müdükona *something up which a tortoise can climb* (see hikuri-taráfõ); hikuri-paripia *tortoise-paripi palm from their small size, smooth or spiny diminutive palms* (Bactris spp. Geonoma spp.); hikuri-taráfõ *tortoise-ladder from the zig-zag shape of the ropes* (Bauhinia spp.); hikuri-toro *tortoise-ankle from the short fat yellow*

pods, kind of warakosa (Inga fagifolia); himario *canary, brightly colored tanagers* (Tanagra violacea); hime *fish*; himokona *buck yam* (Dioscorea trifida); hipanai *large strongly buttressed tree with feathery leaves* (Parkia pendula); hirí *wood ibis* (Mycteria americana); hishiru *stink, bad smell*; hishiru-dan *stink tree, medium sized tree with an obnoxious smell* (Liriosma sp.); hiwara *millipede*; hiwara-dan *millipede-tree perhaps from the smell, tree whose bark smells of cyanic acid* (Chaunochiton kappleri); hoa *ring tailed monkey* (Cebus apella, C. cayanus); hoa *tarantula, black-bird spider* (Avicularia avicularia); hoahoa *jack-in-the-box tree* (Hernandia sonora); hoahoari *bulbul, spotted-breasted antshrike* (Grallaria m. macularia); hoa-soropan *monkey-syrup from the fruit, small tree with sweet pulpy fruit* (Cheiloclinium cognatum), *ropes with sweet pulpy fruit* (Maripa spp.); hokorero *acourie, aguti* (Dasyprocta cayanus); hokorero-shirabuli *acourie-anatto* (see tureli); hokorero-yuron *acourie-matapee from the yellow tail, yellow-tail snake* (Drymarchon c. corais); hokoro *patwa, a scale fish*; honohonori *large brown and yellow Pompelid wasp*; honohonori-dan *honohonori-tree, lighter kind of brown silverballi* (Licaria canella); honoli *tiger-bird, tiger-bittern* (Tigrisoma l. lineatum) honoli-dókochi *honoli-grandfather from the family likeness, zig-zag bittern* (Zebrilus undulatus); hononokwa *doctor-bird, red-vented hermit* (Phaethornis r. ruber); hora *sawarri nut tree* (Caryocar nuciferum); horia *small gnarled savanna trees* (Byrsonima spp.); hororo *ground, earth*; hororo-se *ground inhabitant from its habitat, blind snakes* (Leptotyphlops spp. Typhlops and Atractus); horoto *cultivated gourd* (Lagenaria vulgaris); horoto-balli *horoto from the fruit, passion-flower vines* (Passiflora cirrhiflora, P. fuchsiflora); hotoli *common motmot* (Momotus m. momota); hubu *hog-plum tree* (Spondias mombin); hubu-balli *hubu from the general resemblance, tree with winged fruit* (Loxopterygium sagotii); hududi *black and white woodpeckers* (Coeophloeus l. lineatus, Scapanea spp.); hududi-hako-rechin *woodpecker pestle, piculets* (Picumnus spp.); hududi-shi *woodpecker-head from the crimson bracts, low savanna plants* (Amasonia campestris); huri *fish related to haimara* (Macrodon intermedius); hurihi *swamp trees with black edible oily fruit* (Sacoglottis obovata); huruasa *large tree with feathery leaves and rhomboidal leaflets* (Pithecellobium jupunba); huruasa-bana *huruasa-leaf from the rhomboidal shape of the small scalefish*; hurue *white-headed stickie-monkey* (Pithecia pithecia); hurue-reroko *hurue-lip from the swollen petioles inhabited by ants, small trees* (Cordia nodosa), *hairy shrubs* (Maieta guianensis, Tococa aristata), *tough black wiry rope of white sand-forest*; huyé *old witch, common ani* (Crotophaga ani); hürühürü *file for sharpening cutlasses*; hürühürü-dan *file-tree from the long orange flower spikes, tree with finely divided leaves* (Dimorphandra hohenkerkii).

ibi *small*; ibi-banaro *small-leaves, small trees with small leaves and white flowers* (Myrcia spp.); ibi-koro *small kind*; ibio *twin*; ibio-kili *twin-place, low or secondary bush from the numerous coppice shoots*; ida-daia *calabash-stem, calabash tree* (Crescentia cujete); ifa *duck*; ifa-kuti *duck-foot from the round leaves, water hyacinth* (Eichornia azurea), *water poppy* (Limnocharis commersoni); ifa-tika *duck-dung from a fancied resemblance, brownish-green minute aquatic ferns* (Azolla and Salvinia); ihi *tail, arrow cane used for blowpipes* (Gynerium sagittatum); ihiri *eel*; ihiri-bona *eel-bone from the winged stems, vine with large mauve papilionate flowers* (Centrosema triquetrum); iminari *scorpion, conical kind of chili pepper with a curved point like a scorpion's tail* (Capsicum frutescens); iminari-balli *scorpion from the curved flowers* (see karo-shiri); imiri *smaller kind of crucifix fish* (Sciadeicthys sp.); imirimia *riparian bush with finely divided leaves and feathery white flowers* (Pithecellobium adiantifolium); imirimia-balli *imirimia from the general resemblance, medium-sized tree with yellow flowers* (Cassia pteridophylla); imoro *small pithy tree with yellow flowers*

(Palicourea guianensis); isoro *shrimp, the common fresh water species* (Palaemon amazonicus); itana *fleshy-leaved epiphytic plant* (Philodendron sp.); itara *small second-growth tree with reddish sap used as a dye* (Loreya spp. Henriettea spp.); ite *fan-leaved palm* (Mauritia flexuosa); ite-balli *ite, riparian trees with showy yellow flowers* (Vochysia spp.); itekoróro *tiger-bird, bigger than honoli*; itikiboro *white-shouldered tanager* (Tachyphonus luctuosus). *bobolink* (Dolichonyx oryzivorus), *corkwood tree* (Pterocarpus spp.); itikiboro-balli *corkwood from the general resemblance, trees with yellow flowers and deeply colored heartwood* (Swartzia spp.); itikiki(itiki) *common kiskadees* (Pitangus s. sulphuratus, P. 1. lictor); itíriti *type of mukru suitable for basket work* (Ischnosiphon obliquus); ituri *howler monkey, red baboon* (Alouatta seniculus), *baboon worm, light brown hairy caterpillar*; ituri-hi *baboon-tail from the young curled fronds, tree fern, kind of warakosa from the long curled fruit* (Inga rubiginosa); ituri-ishi-lokodo *testicles belonging to baboon, from the yellow rugose fruit, tree with cream coloured latex* (Helicostylis poeppigiana), *riparian vine from the glossy yellow fruit,* (Amomospermum schomburgkii); ituri-wallaban *baboon-wallaba, harder kind of wallaba with erect mauve flowers* (Eperua grandiflora, E. jenmanii); iwida-(ida) *calabash*; iwida-balli *calabash from the large round fruit, cannon-ball tree* (Couroupita guianensis), *small tree of creek bank.*

jike(ijike-hü) *ear*; jinamari *scarlet-topped toadstool*; jironjiron *cricket* (Gryllidae); jo-(ojo-hü) *breast*; jotoro *fleshy plant with long leaves and irritant sap* (Dieffenbachia paludicola).

kabauro *pium fly* (Simulium spp.); kabo-(ükabo) *hand, paw*; ka-bodali-bolua *something with a baking pan in its chest, herring-like fish with inflated chest* (Chalcinus rotundatus); kabu *medium-sized tree with white latex and large leaves* (Pouteria jenmani); kabuanama, kabuashi *sackiewinkie, squirrel monkey* (Saimiri sciureus); kabuduli *water lianes, large brown scaly ropes with abundant sap* (Doliocarpus, Davilla and Tetracera spp.); kabukalli *stinkwood* (Goupia glabra); kaburishi *perch with white streak along each side* (Leporinus); kaburito *goat from the spanish*; kabuya *field for cultivation*; kabuya-hororo *field-ground, suitable type of ground for cultivation*; kabuya-koro *something in a field, small tree common in abandoned fields* (Trema micranthum); kabuyau-kili *field-place, the actual spot suitable for cutting a field*; kadaburichi *long john tree* (Triplaris surinamensis); kaditiri *large buttressed trees with membranous pods* (Sclerolobium spp.); kadükankaboro *one who likes being a potter, mud or potter-wasp*; kaduru *kind of patwa fish, larger than hokoro*; kairi *island*; kairi-balli *island-tree, small trees with round, velvety brown fruit* (Licania heteromorpha); kaiaba *dog flea*; kaiakaia *Hahn's macaw* (Diopsittaca hahni); kaiakaiadan *macaw-tree, muri and savanna shrubs with white wooly flowers* (Pagamea spp.); kaiakaia *small white sand tree with white flowers* (Retiniphyllum schomburgkii); kaiarima *medium-sized buttressed trees with tiny greenish flowers* (Maytenus spp.); kaia *house mouse* (Mus musculus); kaiedi *tree with custard apple-like fruit* (Anona muricata); kaioro *hammock rope*; kaiukuchi *alligator* (Caiman sclerops); kaiukuchi-bokechi *alligator's elder brother from the general resemblance, water iguana* (Iguana sp.); kaiukuchi-hi *alligator-tail from the flat wavy-edged stems, epiphytic cactus* (Phyllocactus phyllanthus); kakalaka *cockroach*; kakaralli *smooth black trees with conical fruit* (Eschweilera spp.); kakarua *wild liquorice tree* (Pradosia schomburgkiana); kakota *froth*; kakota *grey, white*; kakotaro *frothy from the tree's habit of exuding frothy sap when wounded, white sand-tree* (Ilex umbellata var. humirioides); kakota-shiru *grey-head, tufted grasses with grey flower spikes* (Syntherisma digitata); kakürio *wild guava* (Calycolpus and Myrcia spp.); kakutiru *many-footed, stilt-rooted, red mangrove* (Rhizophora mangle); kalakona

turkey; kaleko *stone*; kaleko-likin *stonés pet bird from the all grey color, Schomburgk's ant-bird* (Myrmoborus leucophrys angustirostris); kali *cassava bread*; kali-se(kalisese) *inhabitant of cassava plants, guiana flower pecker* (Coereba guianensis); kaloli *cassava tuber*; kaluali *herring-like fish* (Chalcinus sp.); kama *bush cow, tapir* (Tapirus terrestris); kama-dan *tapir tree from the tapir's preference for its fruit, small trees* (Posoqueria spp.); kamahora *strongly buttressed trees with white latex* (Pouteria spp.); kama-kuti *tapir-foot from the digitately divided leaves, soft wooded trees, the pods filled with silky fibre* (Bombax spp.); kamana *pirai fish with triangular projection on the belly*; kamanali *sharp, sedges with razor-edged triangular stems* (Becquerelia and Scleria spp.); kamarakata *riparian tree with fragrant white flowers* (Sweetia nitens); kamarasana *toadstool, mushroom*; kamato *gecko, house lizard* (Sphaerodactylis, Thecadactylis spp.); kama-ye *tapir-tongue from the fleshy oblong leaves, vanilla* (Vanilla pompona); kambana *butterfly, moth*; kamodo *water camudi, anaconda* (Eunectes gigas); kamunashi (see adubuna-se); kamwari *large kind of climbing palm with stout prickly stems* (Desmoncus palustris); kamwata *bamboo* (Bambusa vulgaris. Guadua spp.); kanaküdi *cassava stick, bitter cassava* (Manihot utilissima); kanaküdi-balli *cassava from the digitately divided leaves, second-growth trees* (Cochlospermum spp.), *buttressed swamp trees with tri-veined leaves* (Alchornea triplinervia, Alchorneopsis floribunda), *rope with rugose leaves and tiny whitish flowers* (Dichapetalum pedunculatum); kanihiri *wild cocoa, low riparian tree with large cocoa-like pods* (Bombax aquaticum); kanihiri-balli *kanihiri from the general resemblance, swamp trees with cocoa-like pods* (Bombax spectabile); kanoa *canoe with blunt end*; kanoa-balli *a canoe from the obovate leaves, second growth tree* (Byrsonima stipulacea); kanoma *larva of smaller grugru beetle* (Rhina barbirostris); kanomakaro *Colubrine grass snake which feeds on lizards*; kanoma-oyu *kanoma-mother, smaller grugru beetle* (Rhina barbirostris); kansa *goose from the spanish*; karaba *oil for anointing skin or hair, crab-wood tree* (Carapa guianensis); karaba-balli *karaba from the general resemblance, medium sized tree* (Guarea guara); kárakára *rope with long scarlet flower spikes* (Norantea guianensis); karakaráro *tall tufted sedge of moist sand* (Diplasia karatifolia); karampai *black rope with fleshy pink triangular flowers* (Anona haematantha); karará *blue and yellow macaw* (Ara araurana); karasuri *smaller green and white kingfishers* (Chloroceryle spp.); karatabako *cartabac, bream-like fish* (Metynnis sp.); karau *grass, grassy place, savanna*; kareau *southern limpkin* (Aramus s. scolopaceus); karia *short-stemmed spiny palm with spiny fruit* (Astrocaryum plicatum), *second-growth vine with brown and yellow flowers* (Stigmaphyllon fulgens); karihiwa *grass birds, twatwa* (Spermophylla spp.); karina *fowl from the spanish*; karina-sa *fowl-young one, chicken*; karina-sepére *fowl-comb from the scarlet tuberculate fruit, shrubs with white latex* (Tabernaemontana spp.); kario *squirrel* (Sciurus aestuans); karishiri *small black whippy trees* (Oxandra asbeckii); karishishi *wild dog* (Icticyon venaticus); káro *scarlet macaw* (Ara macao); karoba *hanakwa, little guan* (Ortalis m. motmot); karoba-körö *hanakwa-anklet, parasitic vine with wiry orange stems which might entangle birds* (Cassytha filiformis); káro-bimitia *macaw-humming bird from the general color, king humming-bird* (Topaza pella); karohoro *matchwood* (Schefflera paraensis, Didymopanax morototoni); káro-shiri *macaw beak from the red-brown elliptical seeds called monkey-nuts* (Cuervea kappleriana); *herbs from the red curved flowers* (Centropogon sp.); karoto *small kind of warakosa with feathery white flowers on the branches* (Inga spp.); karuada *epiphytic wild pine* (Aechmea spp.); *karatas fibre* (Bromelia karatas); kasapan *larger kind of sea turtle* (Chelonia mydas); kasekoyaha *river dolphin* (Sotalia guianensis); kashi *skinfish related to laukidi but smaller, with shorter head;* kashima *sugar*

or custard apple (Anona reticulata); kashiri *inedible variety of sweet potato producing purplish coloring matter, vine with cut leaves producing a purplish dye* (Serjanea membranacea); kashishi *red stinging ant of houses* (Solonopsis geminata); kasórua *four-eye fish* (Anableps tetraphthalmus); katakata *small grey aquatic frog*; kathoriro *johnipper, malaria mosquito* (Anopheles darlingi chiefly); katikaro *mudfish smaller than buteri*; katiti *crab-hawk* (Buteogallus aequinoctialis); katoro *bush cow, tapir* (Tapirus terrestris); katuburi *wild lily, swamp plants with yellow flowers* (Rapatea paludosa, Spathanthus unilateralis); kauta *trees with brown tomentose fruit* (Licania spp.); kauta-balli *kauta from the general resemblance, trees with velvety brown fruit* (Licania venosa and L. majuscula); kawaio *horse from the spanish*; kawaio-hi *horse-tail from the feathery brown flower head, deer grass* (Aristida setifolia); kawalainaro *labba* (Cuniculus paca); kawánari *locust tree, large fruited kind* (Hymenaea courbaril); kayuwa *bushy shrub of river banks* (Hibiscus tiliaceus); kayuwa-balli *jack-in-the-box tree* (Hernandia sonora), *bushy shrub of river banks, sea cotton* (Pavonia spicata); keherõ(kherõ) *something with a stink gland, white-lipped peccary* (Tagassu tajacu); keherõ-ite *peccary-tree with finely-divided leaves and long segmented fruit* (Inga sp.); kekero *spurwing, jacana* (Jacana spinosa jacana); kerekere *yellow-throated parrot* (Eupsittula pertinax chrysophrys), *kind of creek patwa fish*; kereme *queriman,* (Mugil brasiliensis); kereti *light silverballi trees* (Ocotea spp.); kharakhara *yellowish kind of creek patwa fish*; kharemero *black*; kharemero-shirua-balli *black silverballi from the dark heartwood, brown silverballi* (Licaria canella); kibihi *coatimundi,* (Nasua nasua); *scale-fish of perch type with dark body stripes like those on a kibihi's tail* (Leporinus sp.); kibihi-dan *kibihi-tree from the smell, small undergrowth trees* (Ryania spp. Casearia spp.); kibihi-likin *kibihi's pet bird from the coloration, blue and white spotted tanager* (Tanagra sp.); kibiwara *water-haas, capybara* (Hydrochoerus hydrochaeris); kibiwara-koton *water-haas food from the animal's fondness of the plant, riparian herb* (Coutoubea ramosa); kidale *calabash;* kidale-banaro *calabash leaves from the convex leaflets, low spiny palm* (Bactris oligoclada); kili *place*; kiraha *pond, body of water*; kirikahü *fire stick to produce fire by rubbing, black rope used as fire stick* (Guatteria scandens); kirikaua *wild nutmeg tree* (Iryanthera spp.); kiromare *cultivated gourd-like vine, the dry fruit used as baby's rattles* (Lagenaria vulgaris); koba(okoba) *tacuba, heartwood of a tree*; kobökö *silverbait fish*; kodede *guiana toucanet* (Selinidera culik); kodokodo *mole cricket* (Scapteriscus sp.); kodori *moriche oriole* (Melanopsar chrysocephalus); kodua *ducklers, cormorants* (Anhinga anhinga, Phalacrocorax o. olivaceus); kokobero *dusky night-hawk* (Nyctipolus nigrescens); kokoriti *kokorite palm* (Maximiliana regia), *fig banana*; kokoriti-balli *kokoriti from the fruit, buttressed trees with white latex* (Oxythece ambelaniifolia, Pouteria spp.); kokwi *firefly, black-faced hawk* (Leucopternis melanops); kolekonaro *something sluggish, boa constrictor* (Constrictor c. constrictor); komakati *caterpillar*; komaramara *wild sapodilla tree* (Duroia eriopila); komaramara-balli *komaramara from the general similarity, small trees* (Amaioua guianensis); komata *butter bean* (Dolichos lablab); konali *woody herbs, the leaves used for poisoning fish* (Clibadium spp.); konan *how one walks*; konáparo *shrubs with tiny leaves used for poisoning fish* (Phyllanthus spp.); koneso *rabbit from the spanish*; konoko *forest, jungle, tree with copper colored fruit* (Licania cuprea), *strongly buttressed tree with white latex* (Pouteria engleri); konoko-se *forest inhabitant, bushmaster snake* (Lachesis muta); konono-balli *konono, a kind of wild cocoa tree* (Bombax jenmani); konoribi *wild maran tree* (Amanoa guianensis); konoribi-balli *konoribi from a vague resemblance, small riparian trees* (Homalium sp.); koraro *bat-seed trees* (Andira spp.); koraro-balli *koraro from the general resemblance, deciduous trees with pink flowers*

(Hymenolobium sp.); korashiri *white-throated thrush* (Turdus phaeophygus); koráso *cuirass fish of brackish water* (Arius sp.); korataka *grasshopper, locust*; koratari *creek queriman fish* (Mugil sp.); kórekóre *kind of frog*; korekoro *larger type of sunfish* (Crenicichla sp.); koro *one of a kind*; koro(okoro) *knee, joint*; körö(ükörö) *anklet, band worn around ankles by Indians*; koroba *great ani, old witch* (Crotophaga major); koro-balli *trysil tree* (Pentaclethra macroloba); koroboreli *purple-heart trees* (Peltogyne spp.); koroda *courida mangrove* (Avicennia marina); korodo *spotted barbet* (Capito niger); korokoro *curriecurrie, scarlet ibis* (Guara rubra); korokoro-bujiro *cayenne ibis, bush curriecurrie* (Mesembrinibis cayennensis); korokoróro *large trees bearing large scarlet beans* (Ormosia coutinhoi); kororo *silverbait fish larger than koboko*; koruati *fleshy stemmed herbs with red fruit* (Renealmia spp.); kotaka *cayenne wood rail, killicow* (Aramides c. cajanea); kotakaima *uniform crake* (Amaurolimnas c. concolor); koton *food*; kowau *cow bird, capuchin bird* (Perissocephalus tricolor); koyoha(Okoyoha) *jumbi, spirit*; koyara *red forest deer* (Mazama rufa); koyara-aruate *deer-tiger from the color, short-tailed puma* (Felis sp.); koyara-bimitia *deer humming-bird from the color, king humming-bird* (Topaza pella); koyara-kushi *deer eye from the white flower head surrounded by purple bracts, subshrub* (Cephaelis violacea); koyara-ojo *deer breast, cultivated plant* (Amaranthus sp.); koyara-te *deer guts from the appearance, reddish bracket fungus* (Auricularia sp.); koyechi *slimy, small black tree with slimy bast* (Rollinia exsucca); koyechi-balli *koyechi, tall buttressed tree of white sand forest* (Lueheopsis rugosa); koyoko (okoyoko) *ear;* kubia-(okubia) *eye lotion;* kudibiu *bird;* kudibiu-shi *bird-head from the oval fruit, tree with white latex* (Micropholis venulosa); kufa *epiphytic shrubs with onion-like fruit* (Clusia spp.); kufi *coffee tree* (Coffea arabica); kufi-balli *coffee from the leaves, small tree* (Guarea davisii); kula *water sawarri tree* (Caryocar microcarpum); kulakula *screecher parrot* (Amazona o. ochrocephala); kulishiri *small trees with trigonal fruit* (Cupania, Matayba, Vouarana spp.); kulu *kind of marudi* (Penelope sp.); kumaka *silk cotton tree* (Ceiba occidentalis); kumaka-balli *kumaka from the general resemblance, epiphytic fig trees* (Ficus, Coussapoa spp.); kumaru *tonka bean tree* (Dipteryx odorata); kumuchiri *wood-ants' nest*; kumürüda *cuffum, tarpon* (Tarpon atlanticus); kurahara *large tree with diamond pattern bark* (Calophyllum lucidum); kurahara-shirua-balli *silverballi like kurahara from the bark* (Ocotea glomerata); kure *red, ripe*; kure-beli *red fellow, red stinging ant*; kureme *bête rouge, harvest mite*; kurero *something red*; kurero-shirua-balli *red silverballi, yellow or gale silverballi* (Aniba ovalifolia); kure-yure *red-throat, kind of pirai fish with red gill spot*; kuriaka *screecher parrot* (Amazona a. amazona); kuriak(a)-aria *kuriaka snake, green parrot snake*; kuriakuria *black-headed caique* (Pionites m. melanocephala); kuribiro *fish with compressed ribbon-like body* (Eigenmannia virescens); kurihi *house rat, spiny rat* (Echimys armatus); kurihi-ferobero *rat-big, ironic for tapir* (Tapirus terrestris); kurihi-koyoko *rat-ear from the club shaped flower, undergrowth trees* (Anaxagorea spp.); kurihi-likin *rat's pet bird, chestnut-bellied gnat eater* (Conopophaga a. aurita), *bird's note resembles noise made by young rats*; kurimiru *fat pork tree* (Chrysobalanus icaco); kurobado (see kuriaka); kuruari *kind of cartabac found in savanna swamps* (Metynnis sp.); kuse *earthy, coushi or parasol ant* (Atta cephalotes); kuse-oyu *coushi-mamma, worm snakes* (Leptotyphlops, Typhlops, Atractus sp.); kushi(okushi) *eye*; kuti(okuti) *foot*; kuya *black-tailed trogon* (Curucujus m. melanurus); kuyama *small trees with whorled branches and narrow leaves* (Xylopia spp.); kuyamaro *smaller kind of coushi ant* (Atta sp.); kuyari *red and blue macaw* (Ara chloroptera); kuyumoro *manatee, sea cow* (Manatus manatus); kwa *crab*; kwa-bada *crab-claw from the narrow conical fruit, variety of chili pepper* (Capsicum frutescens); kwa-banaro

crab-leaves, devildoer ropes containing poisonous alkaloids (Strychnos spp.); kwakwara *check birds* (Thamnophilus spp.); kwakwaro *small gillbacker fish* (Sciadeichthys parkeri); kwa-sepére *crab-comb* (see sakwa-sepére); kwata *red-faced spidermonkey* (Ateles paniscus); kwatai *guiana spine-tail* (Synallaxis g. guianensis); kwerekwere *frog-bird, cayenne tityra* (Tityra c. cayana); kwimali *brown ant.*

labba *spotted cavy, paca* (Cuniculus paca); labb(a)-aria *labba-snake from the labba-like markings, fer-de-lance* (Bothrops atrox); labb(a)-aruate *labba-tiger from the labba-like markings, ocelot* (Felis pardalis); laliwa *migratory butterfly*; lama *bent, twisted*; lamanoro *twisted neck from the habit of turning the head sideways when alarmed, water tortoise* (Nicoria punctularia); lana *tree whose fruit produces a blue-black dye* (Genipa americana); lan(a)-aria *lana-snake from the blue-black color, yellow tail* (Drymarchon c. corais); lana-balli *lana from the general similarity, small tree with large white flowers* (Gustavia augusta); larima *kind of catfish* (Rhamdia sp.); laukidi *type of catfish related to kashi but with longer heads*; laukidi-dan *laukidi tree because laukidi are fond of the fruit, riparian tree with yellow flowers* (Elvasia essequibensis); laulau *large Siluroid skin fish* (Brachyplatysoma vaillantii); likin (ilikin) *bird, pet bird*; limona *lime from the spanish*; limona-balli *limona from the yellow fruit, tree with white latex* (Achrouteria pomifera); lobo *common brownish-green lizard*; loke *inside*; loko *person, people*; lu *tall pinnate-leaved palm* (Oenocarpus bacaba var. xanthocarpa); lukonan *lukunani, perch-like fish yellow on the breast* (Cichla ocellaris); lukonan-jo *lukonan breast from the yellow dye in the plant, rope with angled stems* (Cassia spp.).

maba *honey*; maba-balli *honey from the abundance of nectar in the flowers, small trees* (Conceveiba guianensis, Aparisthmium cordatum); maba-kubia *honey-eye lotion, rope with tiny yellow flowers* (Coussapoa microcephala); maba-oyu *honey-mother, honey-bee* (Melipona sp.); mabudehi *soft black pliable rope* (Banisteria leptocarpa); maburi *Tabanid fly*; maburi-bürü-bero *many of a kind of striped maburi, large grey fly with paler stripes, whose young are viviparous*; mabwa *small lactiferous trees with showy white flowers* (Himatanthus spp.); madaburi *small stilt-rooted trees* (Clusia spp.); madükŭro *one who never sees, blind person*; madünaro *one without hands, snake*; maho *tree with tough bast used for cordage* (Sterculia spp.); maho-balli *maho from similarity of wood, tree with round green buoyant fruit* (Panopsis sessilifolia); mahölöro *slow one, boa constrictor* (Constrictor c. constrictor); maiobuli *smallest kind of tick*; makãro *one who never bathes*; makarasali *small trees with scarlet bracts enclosing the fruit* (Heisteria spp.); makoba *kind of catfish, like dawalo* (Hypothalmus sp.); maködi *light brown owl* (Lophostrix sp.); makörio *marabunta, social wasp*; makoriro *small tree with large fruit* (Ambelania acida); makorokoro *small kind of coral snakes* (Micrurus spp.), *false coral snakes* (Erythrolamprus, Oxyrhopus, Hydrops); makwaka *spider lilies* (Hymenocallis tubiflora, Crinum commelynii); makwari *whip*; makwari-balli *whip from the long, flexible flowering spikes, ropes with rubbery latex* (Forsteronia spp.); makwasana *flounder, guiana sole* (Achirus fasciatus); mamu *great tinamou, maam* (Tinamus m. major); mamu-dan *maam tree, trees with fleshy black fruit eaten by Maam* (Neea spp. Pisonia spp.); mamu-likin *maam's pet bird from its habits, cayenne ant thrush* (Myrmornis torquatus); mamu-rechin *maam husband, snake supposed to steal maam's eggs*; mamuri *epiphytic plants with tough aerial roots used for basket work* (Carludovica spp.); mamuri-balli *mamuri, cauliflorous trees with stiff leaves* (Mouriria spp.); mamusare *maam ankle, hardwooded shrubs with creamy flower spikes* (Rinorea spp.); manaka *manicole palm* (Euterpe edulis); manari *sieve, sifter*; manari-balli a *sieve from the finely divided leaves, trees with feathery white*

flowers (P thecellobium spp.); manebokoro *small tree with reddish flowers* (Trichanthera gigantea); manni *stilt-rooted trees with yellow gum* (Symphonia globulifera); manni-balli *manni from the general resemblance, large tree with yellow gum* (Moronobea coccinea); manobodin *deeply fluted tree* (Emmotum fagifolium); manoraima *largest kind of armadillo* (Cabassous unicinctus); manyokina *banana*; manyokina-balli *banana from the fruit, tree with bitter bark* (Geissospermum sericeum); maparaua *smaller black wild dog* (Icticyon sp.), *black Tabanid fly*; mapórokō *large reddish tree with feathery white flowers* (Inga alba); marakati *mud or potter wasp*; maramara *whitebait fish*; marãro *salampanta lizard* (Tupinambis sp.); marauri *deep sea sharks*; maria *ground doves* (Columbigallina spp.); mario *sandfly, midge*; marishi *corn*; marishi-balli *corn from the creamy-brown flowers, medium-sized trees* (Licania spp.); marudi *cayenne guans* (Penelope sp.); marudi-bariria *marudi-hawk from its prey, shining hawk* (Asturina n. nitida); marudi-bikoro *marudi-small kind* (Penelope marail); marudi-ferobero *marudi-large kind* (Penelope granti); marudi-hi *marudi-tail from the oblanceolate leaves, epiphytic plants* (Philodendron spp.); marudi-yure *marudi-throat from the scarlet flower bracts, vine with scarlet passion flowers* (Passiflora coccinea); masari *white sand, scrambling shrubs, often prevalent on white sand* (Coccoloba spp.); mashishikiri *spirit, jumbi*; mashishikiri-likin *spirit's pet bird from the whistling note, peacock cuckoo* (Dromococcyx pavoninus); masoreke *second largest kind of armadillo* (Tatusia sp.); matokotoko *caterpillar that carries its own house of dried leaves around*; matola *collared peccary, abuya* (Tagassu pecari); matora *small tree, often clumped, with large round leaves* (Coccoloba latifolia); maua *muri maam, lesser tinamou* (Crypturellus undulatus adspersus); mauchakona *silver fish related to buteri, but does not suck mud*; mauriuri *small round variety of chili pepper* (Capsicum frutescens); mauyakana *large-billed hawk* (Buteo m. magnirostris); mayupuri *bush cow, tapir* (Tapirus terrestris); mayupuri-aruate *tapir-tiger from the color, black jaguar* (Felis pardalis); merehi *cashew tree* (Anacardium occidentale); merekuya *vine with white passion flowers* (Passiflora nitida); merekuya-ferobero *large kind of merekuya, granadilla* (Passiflora quadriglandularis); mereyu *great tern* (Phaethusa s. simplex); miau *narrow ribbon-like fish* (Eigenmannia sp.); mibi (mibia) *thin rope with tough pliant stems used for basket work* (Heteropsis jenmani); mibiki *jigger* (Pulex irritans); mimili *dew*; mimili *sandpaper bush of savannas* (Curatella americana); miri *red sugar-ant*; mitiboko *black vulture* (Coragyps atratus foetens); mode *woody epiphyte with white milk* (Havetiopsis flavida); mododo *rhinoceros or antelope beetle*; mokoko *kabauro or pium fly* (Simulium spp.); mokóro *hard type of mukru, unsuitable for basket work* (Ischnosiphon arouma); mola *mule from the spanish*; mora *mora* (Mora excelsa); mora-balli *mora from a vague resemblance, trees with white latex* (Pouteria minutiflora); mora-bana *mora-leaf from the dry leaf-like markings, poisonous snake* (Lachesis sp.); morabuküya *red Mora*, (Mora gonggrijpii); morako *avocado pear* (Persea gratissima); mora-koyaha *Mora-spirit, jabiru* (Jabiru mycteria); moro *dogfish* (Acestrorhyncus falcirostris); moro-aima *jew fish*; moro-balli *dogfish, medium-sized trees used for poisoning fish* (Talisia spp.); moroko *silverbait fish*; morokoto *morocot* (Myletes sp.); morokudi *owl* (Pulsatrix sp.); morüta *duckweed, water lilies* (Nymphaea spp. and Lophotocarpus guianensis); mosuri *floating grass, elephant grass* (Paspalum elephantipes); munika *tiny skin fish like imiri, dark brown with white dots*; muniri *large black ant with vicious sting* (Pariponera clavata); muniri-dan *muniri tree from the muniri ant smell, shrub* (Siparuna guianensis); muri *scrub savanna on white sand, low gnarled shrub or small tree only found growing in muri* (Humiria floribunda).

noro(onoro) *neck*; noroko(onoroko) *mouth*.

okokonshi *hardwooded tree with fibrous orange fruit* (Quiina sp.); ole *tannia, eddoe, dascheen* (Colocasia, Xanthosoma); ole-balli *ole, swamp plant with sagittate leaves* (Urospatha hostmanni); oma *largest kind of pirai fish*; onabo *low, lowdown*; onabo-se *lowdown inhabitants, worm snakes* (Leptotyphlops, Typhlops, Atractus sp.); oradiro *narrow ribbon-like fish* (Eigenmannia sp.); orali *bloodwood trees* (Vismia spp.); orari *curare poison rope* (Strychnos toxifera); oraurali *roraima aracari* (Pteroglossus aracari atricollis); oriyu *water mamma, water spirit*; oriyu-o-yurite *water mamma-tobacco from the resemblance to tobacco plant, bluebell* (Chelonanthus uliginosus); ororuwe *variegated tinamou, maam swa* (Crypturellus v. variegatus); otokoko *purple-tinted pigeon* (Columba purpureotincta); otokoma *larva of larger grugru beetle* (Rhyncophorus palmarum); oyó *rump of bird or animal*; oyu *mother*.

pacha *water melon* (Citrullus vulgaris); pakaromare *mud skipper* (Periophthalmus koelreuteri); pakuma *small salt-water fish with fine scales and large mouth*; pakuri *large tree with yellow edible fruit* (Platonia insignis); parapara *fish poison plant, spanish konali* (Phyllanthus spp.); parekosan *large trees composed of many thin flanges radiating from the center* (Swartzia spp.); paripi *spiny palm with orange fruit* (Bactris minor); paripi-balli *paripi from the orange fruit, large tree with white latex* (Achrouteria sp.); pero *dog from the spanish*; pero-ishi-lokodo *dog's testicles from the fruit* (see buri); perokwa *white throated spinetail* (Synallaxis albescens albigularis); porokai *incense trees* (Protium spp.); poroko *pig from the spanish*; potoshi *snook fish*; pratna *plantain* (Musa paradisea); puito *puff fish* (Calomesus psittacus); pushi *cat*; pushi-sa *cat young-one, kitten*.

rabaraba *warakosa tree with large flat curved fruit pods* (Inga splendens); raure (üraure) *fibre, strand*; rechi(irechi) *husband*; reho *solitary type of manicole palm* (Euterpe stenophylla); rero *tall broad-leaved grass* (Panicum magnum); rero-balli *rero from a vague resemblance, grass with flowers on separate shoots* (Pariana spp.); reroko (üreroko) *lip*; riaria *sun-bee, six-o-clock bee* (Cicada sp.); riaria-dan *sun-bee tree, tree with showy yellow flowers* (Cassia multijuga); rimorimo *large kind of black and green cowfly*; rokoroko *large tree with white flowers and woody fruit* (Macoubea guianensis); rokroroko-shi *rokoroko seed, fish of imiri type which feeds on this seed*; ruri *tree with small oval spiny fruit* (Chaetocarpus spp.); ruya *monkey-apple, small tree of seashore*.

sa(üsa) *young one or thing*; sabwatete *red-fronted woodpecker* (Tripsurus r. rubrifrons); sada *trees armed with spines* (Fagara spp.); saka *dry from the many dry branches on the trees, purpleheart tree* (Peltogyne venosa); saka-balli *saka from the general similarity, riparian trees* (Cynometra spp.); sakasaka *small brownish lizard*; sakasakali *great grey kingfisher* (Streptoceryle t. torquata); sakü *sackies, finch-like birds* (Thraupis spp.); sakwa (meaning not known); sakwa-sepére *sakwa crest, cauliflorous tree with pink flowers* (Bellucia grossularioides); sansaparu *long-billed rail* (Rallus longirostris); sárama *mealy amazon parrot* (Amazona f. farinosa); sáram(a)-aria *sarama snake from the green color, parrot snakes* (Boa canina, various Colubrine spp.); sárama-kushi *sarama-eye from the fruit* (see kudibiushi); sarapa *three-pronged fish-arrow*; sárara *small coastal crab*; sare *stiff, rigid*; sare(üsare) *ankle, heel*; sare-banaro *stiff leaves from the habit* (see mibi); sarebebe *swamp trees with flat brown pods* (Macrolobium spp.); sarebebe-balli *sarebebe from the general resemblance, tall tree* (Vouacapoua macropetala); sari *yellow-headed caracara hawk* (Daptrius ater); sarisari *false coral snake* (Liophis sp.); saumaro *chow, black-crowned heron* (Butorides s. striatus); sawara *wrinkled from the tendency of the leaves to crinkle when dry, tufted plant* (Calathea cyclophora);

sawarama *royal or cabbage palm* (Roystonea oleracea); se(üse) *something that moves or lives in, inhabitant of*; sebesebe *swallow puff bird* (Chelidoptera t. tenebrosa); sebi *white edible fungus*; semeheyu *obiah man, witch doctor*; semeheyu-balli *obiah man because the leaves are used for obiah practices, sweet sage* (Lantana camara); sense *fowl*; sensen *black Buprestid beetle*; sepére(üsepére) *crest, comb of a bird*; serebe *silverbait fish* (Gasteropelecus sternicla); serebe-dan *serebe tree from the small shiny leaflets, small trees* (Swartzia spp.); seshi *wife-sick, brown cuckoo* (Tapera n. naevia); seweyo (meaning not known); seweyu *tree of life* (Thevetia neriifolia); seweyu-balli *seweyu from the yellowish latex* (see hatti), *rope with the leaves red-brown beneath* (Connarus sp.); shi(ishí) *head*; shi-(ishi) *seed, testicle*; shiba *rock, stone*; shiba-dan *stone-tree* (a misnomer), *large trees* (Aspidosperma spp. Drypetes variabilis); shibali *kind of green and black patwa fish*; shibali-dan *shibali from the rounded leaves, tree with fissile wood* (Hebepetalum humiriifolium); shibero *bull frog* (Hyla maxima); shibero-aria *frog-snake* (Xenodon colubrinus, X. severus); shibero-bime *frog-pepper from the swollen calyx around the fruit, herb* (Physalis sp.); shibodo *red and black forest crab*; shikápo *sheep*; shikaro *sugar cane*; shikishiki *tree cricket*; shikishiki-dan *shikishiki tree, favoured by crickets, blue-flowered plants* (Stachytarpheta spp.); shimara *arrow*; shimar(a)-abo *arrow-bow, bow and arrow*; shimar-abo-karüdahü-arin *one who always breaks the arrow bow, from the snapping noise made by the bird, white-breasted manakin* (Manacus m. manacus); shimara-shiri *arrow-point from the use of the wood, small tree* (Mouriria sagotiana); shimarupa *simarupa tree* (Simaruba amara); shimiri *locust tree with short pods* (Hymenaea davisii); shimito *simito, passion fruit* (Passiflora laurifolia); shimodo *numbfish, electric eel* (Gymnotus electricus); shimorokore *greenish-grey forest rat*; shirabuli *anatto-dye tree* (Bixa orellana); shirabuli-balli *anatto from the fruit, fluted tree with spiny fruit* (Sloanea amplifrons); shirada *cauliflorous tree with feathery white flowers* (Inga lateriflora); shiri(ishiri) *nose, beak, point*; shirika *red and black shiriga crab of the coast*; shiriri *lesser tinamou, maam swa* (Crypturellus s. soui); shirishiri *golden-winged parakeet* (Brotogeris chrysopterus); shiru *sulphur and white-breasted toucan* (Ramphastos vitellinus); shirua *soft wooded trees with faintly aromatic wood* (Nectandra spp.); shirua-balli *shirua from the general resemblance, silverballi trees* (Lauraceae); shiwishiwi (see anareke); sobole *green*; sobolero *something green, thorny shrubs* (Solanum spp.); sobolero-balli *sobolero from the leaves, small trees* (Trichilia roraimana); sokone *tree with creamy latex and white flower heads* (Helicostylis poeppigiana); soribibi *woodrail* (Laterallus v. viridis); soribibi-dan *soribibi tree, tall herbs with showy flowers* (Palicourea spp.); sorakara *frog*; sorópa *syrup, molasses*; sorora *small kind of otter* (Lutra enudris); sorosaka *soursop tree* (Anona muricata); soroya *swallow, martin or swift* (Hirundinidae); sura *child's playpen*; sura-dan *sura-tree from its use, tree with crystaliferous wood* (Hieronyma laxiflora); suriripiti *white-throated manakin* (Corapipo gutturalis); surisuri *blue-headed parrot* (Pionus menstruus); suriti *olive-backed manakin* (Schiffornis turdinus olivaceus); sürü *clustered, gregarious*; sürü-kuli *clustered things or people*; sürü-kuli-mukru *gregarious mukru from its habit, tufted plants* (Ischnosiphon foliosus); sürürü *black marmoset* (Tamarin midas); sürürü-burue *marmoset bullet-wood, small tree with white latex* (Chrysophyllum auratum); suya *large tree with white latex* (Pouteria speciosa); swaburi (see kaiukuchi-bokechi); swaswa *wood hewers, tree creepers* (Synallaxidae).

taitai *sound of hog tusks clashing together*; tala(otala) *jawbone*; taráfo *step, ladder*; tarekwa *river turtle* (Chelys fimbriata); tareli *copcop ant*; tata *firm, strong, hard*; tatabu *hard from the wood, tree with dark brown wood* (Diplotropis purpurea); tatabu-balli *tree with showy yellow flowers* (Martiodendron excelsa);

tata-kaboro *firm-fingered, firm-rooted, sour grass* (Axonopus compressus); tatashiro *hard-headed one, fish like imiri with extra bony head* (Sciadeichthys sp.); tauarāru *tauroniro tree* (Humiria balsamifera); twatwa *snake hawks* (Circus buffoni, Micrastur mirandollei); te(ite) *intestines, guts*; tebeyu *sweethearts, iron weed* (Desmodium spp.), *grass with prickly fruits* (Cenchrus echinatus), *spanish needle, plant with needle-like clinging fruit* (Bidens bipinnata); tete *grandmother*; teteabo *grandmother-backbone from the flat stem, liana* (Chondodendron candicans); teteruma *determa tree* (Ocotea rubra); teteruma-balli *determa from the tufted leaves, small trees* (Conomorpha spp.); thoro *rotten, decayed*; thoro-bararo *rotten fur because the hairs are easily pulled out of the skin, wiribishiri deer* (Mazama humilis); tiba *hard-back beetle*; tibo *bushy, thick*; tibo-kushi *bushy-eye, small tree like letterwood* (Piratinera guianensis); tibukuri *large kind of dare-fish* (Anostomus trimaculatus); tika(itika) *dung, manure*; tima (itima) *beard*; timiti *truli palm* (Manicaria saccifera); tokon *something which can be swallowed, fruit*; tokoro *agami heron* (Agamia agami); tökötökö *whiskered flycatcher* (Myiobius b. barbatus); tokwe *guinea fowl*; tontonle *small ground frog*; toraro *light, soft kind of silverballi* (Ocotea acutangula); toratora *acourie hawk, white collared hawk* (Leucopternis a. albicollis); torindo *worm*; toro (otoro) *ankle*; toronari *race of white-lipped peccary with white legs* (Tagassu tajacu); töröriana *rice bird, rice grackle* (Psomocolax oryzivorus); tureli *tree with feathery white flowers* (Inga gracilifolia); turituri *large brown tick*; turu *tall pinnate-leaved palm* (Jessenia bataua); twitwi *tiny salt-water skin-fish*.

ubudi *wild cashew tree* (Anacardium giganteum); ubudi-balli *ubudi from the leaves, tree with brown conical fruit* (Sloanea schomburgkii); ulu *large trees with fragrant resin* (Trattinickia spp.); ulu-balli *ulu from the wood, tree with purple-brown inflorescence* (Thyrsodium dasytrichum); uni *water, rain*; unikiakia *iron mary trees* (Licania spp.); unikoyaha *water-spirit from its habitat, white-spotted ant thrushes* (Sclateria spp. Hypocnemoides melanopogon); uri *snake*; uriri *fish, like queriman*; uriri-dan *uriri-tree, small tree with finely-divided leaves* (Pithecellobium sp.); uriri-sebia *uriri-sebi fungus, white edible fungus smaller than sebi*; urishi *small spiny palm* (Astrocaryum munbaca); uriuri (see yuriyuri); uru-uru *trinidad pygmy owl* (Glaucidium brasilianum phalaenoides); üsé *mosquito worm*; uya *large trees with finely divided leaves* (Parkia spp.).

wabaima *brown silverballi* (Licaria cayennensis); wabure *reddish kind of pirai fish*; wabure-bariria *wabure hawk, largest kind of pirai fish, from its habit of preying on other fish*; wadara *large deciduous trees with mauve flowers* (Couratari spp.); wadudurі *monkey pot tree* (Lecythis davisii); waia *mud*; waia-balli *mud, small tree with yellow flowers* (Tapura guianensis); waia-dan *mud-tree* (see waia-balli); waia-koyaha *mud-spirit from the bird's habitat, sun bird* (Eurypyga helias); waiki *cultivated warakosa tree* (Inga setifera); waikureli *shrubby tree of savanna fringe* (Symplocos guianensis); waiúre *brown dog tick*; waiuri *savanna orchid* (Catasetum discolor); waiuri-balli *waiuri from a vague resemblance, low fleshy plant* (Xiphidium coeruleum); waiyareme-yushi *scientific work of art, waimarushi tree* (Campsiandra spp.); wakápore *large kind of looper caterpillar* (Geometridae); wakara *American egret* (Casmerodius albus egretta); wakara-dan *egret tree from the thin trunk, small trees like waraia* (Miconia sp.); wakokwa *rufous pigeon* (Columba r. rufina); wakoraio *who-are-you bird, white-necked goatsucker* (Nyctidromus a. albicollis); wakorokoda *black haiari rope* (Lonchocarpus chrysophyllus); walababa *pompadour chatterer* (Xipholena punicea); wallaba *wallaba trees* (Eperua spp.); wamara *tree with purple-brown heartwood* (Swartzia leiocalycina), *spiny caterpillars of the hawk moth type;* wanania *tall tree with spikes of tiny flowers* (Minquartia guianensis); wanasoro *congo pump, trumpet trees* (Cecropia spp.); wanauro

gull, tern; wanauwanari *semi-aquatic sword-leaved plants* (Cyclanthus bipartitus); waraia *small trees with tri-nerved leaves* (Miconia spp.); warakaba *trumpet bird* (Psophia crepitans); warakaba-koro *warakaba joint from the jointed stems, wild pepper plants* (Piper sp.); warakaba-koro-mukru *warakaba joint mukru from the jointed stems, kind of mukru* (Ischnosiphon spp.); warakaba-likin *warakabs's pet bird, ant thrushes which walk on the ground like warakaba* (Formicarius spp.); warakáioro *large tree with long pinnate leaves* (Laetia procera); warakana *great tern* (Phaethusa s. simplex); warakosa *trees with flat segmented fruit* (Inga spp.); warapa *mudfish like yarau* (Erythrinus sp.); warawarakadiro *large black-brown ant with hot sting*; wareke *frog*; waremedo *two-toed sloth* (Choloepus didactylus); waremesuri *warakosa tree with white feathery flowers on the branches* (Inga graciliflora); warero *tall banana-like plants* (Heliconia ballia); warianaro *hoe shark, broad-mouthed shark*; warife *scrambling herb with yellow flowers* (Wulffia baccata); warikoma *rufous woodpeckers with a piercing whistle* (Celeus elegans hellmayri, Cerchneipicus torquatus); warimia *second growth trees with creamy flowers* (Tapirira guianensis); warimiri *spreading tree of marsh woodland* (Cyrilla antillana); wariti *tamandua, ant eater* (Tamandua tetradactyla); wariti-dan *wariti tree from the smell* (see hero); waritimakãro *wariti which never washes, least anteater* (Cyclopes tridactylus); wariti-ye *waritit tongue from the rounded leaves, epiphytic orchid* (Brassavola angustata); warokoma *morning star*; warokomo-kubia *morning star eye-lotion from its use in cleansing the eyes, low herb* (Sipanea pratensis), *pincushion plants of savanna* (Paepalanthus spp.); warokuri *white cedar* (Tabebuia insignis var. monophylla); warua *large black tree with yellow flowers* (Cassia leiandra var. guianensis); warumuri *black ants which nest between tree leaves*; warunana *wild orange tree* (Hortia regia); wasarápa *blackish tree lizard*; washiba *bow-wood tree* (Tabebuia sp.); watorebe *narrow ribbon-like fish ringed with white* (Eigenmannia sp.); wayuwa (see kayuwa); wayuwa-balli (see kayuwa-balli); we *tall tufted sedge* (Rhyncospora gigantea, Lagenocarpus guianensis); weheyu *hold-me-back, climbing palm* (Desmoncus guianensis); wekoyaha *we-spirit from its habitat, yellow marsh bird* (Agelaius icterocephalus); wera(ewera) *phallus*; weraka *apron, aboriginal Indian lap*; werebekwa *white-necked flycatcher* (Legatus l. leucophaius); weshi *sunfish* (Crenichla ocellaris); weshi-raure *sunfish fibre from the red fruit, small trees with scarlet fruit* (Xylopia benthamii); weso *silver-beak tanager* (Ramphocoelus carbo); weso-karobã *weso hanakwa from the color, white-shouldered tanager* (Tachyphonus rufus); wina *cigarette paper*; wina-kakaralli *kakaralli tree whose bark supplied the cigarette paper* (Eschweilera corrugata); winamoro *manicole palm* (Euterpe sp.); wiri *wild lime tree* (Ximenia americana); wiribishiri *small forest deer* (Mazama rufa); wirimiri *kakaralli tree* (Eschweilera confertiflora); wirokaro *sky-lark, muff bird* (Elaenia f. flavogaster); wirokaro-tika *sky-lark dung from the way the seeds are distributed, bird vine* (Loranthaceae); wirokotori *king bird* (Tyrannus melancholicus despotes), *gillbacker fish* (Phractocephalus hemiliopterus); wiru *rusty dove* (Leptotila v. verrauxii), *grey-fronted dove* (Leptotila r. rufaxilla); wisowiso (see wiwala), (Potos flavus); wisowiso-aruate (see wiwala-aruate); wiwa *star, year*; wiwala *night monkey* (Cercoleptes caudivolvulus); wiwala-aruate *night monkey tiger from the light brown color, puma* (Felis concolor); wiwa-seweyon *seven star parakeets* (Urochroma spp.); wiwa-shimara *star arrow, beezing, black grass quit* (Volatinia jacarina splendens).

yabani *red-rumped cacique, red bunya* (Cacicus h. haemorrhous); yabürü *splendid pigeon* (Columba speciosa); yadala *knife*; yadaro *banjaman fish* (Aspredinichthys tibicen); yaho *cotton*; yaho-balli *cotton, wild or sea cotton* (Pavonia spicata); yakoto *large kind of mud fish*; yamoro *dark brown tree-lizard*; yanakari *green toucanet* (Pteroglossus viridis); yarau *small scale-fish* (Erythrinus

erythrinus); yarau-konali *fish poison used for Yarau* (Clibadium sp.); yarayara *small trees with tough pliant wood* (Duguetia spp.); yareme *science, art*; yareyarero *seven star parakeets* (Urochroma spp.); yariman *rope with scarlet flowers* (Combretum cacoucia); yaruru *paddle-wood tree* (Aspidosperma excelsum); yaukariro *swordfish, garfish*; yauro *bird*; yauro-konán *the way a bird walks, woody herb used for poisoning fish* (Tephrosia toxicaria); yawahü *evil spirit, jumbi*; yawahübaron *jumbi axe, ironic for smallest water terrapin*; yawahü-dan *cow-wood tree* (Bagassa tiliifolia); yawahü-dwadan *jumbi cooking-pot from the shape, large round fungus growing from subterranean sclerotia* (Polyperus saprema); yawahü-kaioro *jumbi hammock-rope, ironic for grey-brown whip-snake*; yawahüsarapán *jumbi fish-arrow from the clustered axillary spines, scrambler* (Basanacanthus asperifolia); yawahü-wera *jumbi phallus from the shape, fleshy saprophyte with phalloid inflorescence* (Helosis cayennensis); yawahüyadala *jumbi knife, triangular stemmed sedges* (Cyperus spp.); yawáre *yawarri, opossum* (Didelphis sp.), *narrow ribbon-like fish* (Eigenmannia sp.); yawáre-dan *yawarri tree from the smell of the ants infesting the petioles, small trees* (Tachigalia spp.); yawáre-dan-use *yaware tree inhabitant, the ants which infest Tachigalia trees*; yawáre-shiri *yawarri beak, blue and purple honey-creepers* (Dacnis, Cyanerpes spp.); yebero *blear eyes, a children's ailment*; yebero-bina *medicine for blear eyes from the plant's use, sundew* (Drosera spp.); ye(iye) *louse*; ye(iye) *tongue*; yekoro *silverballi trees* (Ocotea spp.); yente *triangular-stemmed sedges* (Mariscus spp.); yesehe *armadillo marabunta which builds a nest like an armadillo shell*; yesére *second largest kind of armadillo* (Tatu sp.); yeshi *second smallest kind of armadillo* (Tatu sp.); yeshi-dan *yeshi tree from the prickly fruit, small trees* (Duguetia spp.); yeshi-kushi *yeshi eye from the fruit, small trees of scrub forest* (Ternstroemia spp.); yeshi-oyu *yeshi mother from the family likeness* (see manoraima); yoboko *ituri wallaba* (Eperua spp.); yoko *muniri mamma, black ant which resembles the muniri ant* (Pariponera sp.); yokotana *Indian corn, maize* (Zea mays); yukonori *snake-fish*; yuma *larger grugru beetle* (Rhyncophorus palmorum); yumaráka *false coral-snakes* (Liophis spp.); yure(oyure) *throat*; yureli *black water iguana*; yuri *tobacco, tobacco plant*; yuri-balli *tobacco from the general resemblance, tall herb* (Chelonanthus chelonioides), *trees with small yellow flowers* (Trichilia spp.); yurihi *firefly, click beetle*; yurika *mukkamukka plant* (Montrichardia aculeata); yuriyuri *brown lizard*; yuro *matapee for squeezing juice out of cassava*; yurua *spine, pimpla*; yuruka *razor grass* (Scleria spp.); yuruka-se *razor-grass inhabitant from the bird's habitat, guiana ant thrush* (Cercomacra tyrannina saturatior); yushi (oyushi) *piece, portion*; yuwana *iguana, lizard*; yuwana-hi *iguana tail from the spines, rope with finely-divided leaves* (Mimosa myriadenia); yuwana-ro *iguana thing, table trees favoured by iguanas* (Cordia spp.); yuwau *mosquito*.

REVIEWS

PHONEMICS. A Technique for Reducing Languages to Writing. By Kenneth L. Pike. University of Michigan Press, Ann Arbor, 1947. xvi + 254 pp. $3.00.

For maidens and others who may have prayed for a text which would combine within the covers of one book a summary of much of our knowledge of phonemics, Pike's book is the answer. So splendid a job is done in *Phonemics* that one may even question whether the beginning student now needs first to study Pike's previous work, *Phonetics*; or whether *Phonemics* by itself does not sufficiently orient the reader in both the production of linguistic sounds[1] and their organization[2] to enable him to pass immediately to the next unit of linguistic analysis, that is, to morphemes. It is hard to see how anyone could disagree with Charles C. Fries' Foreword statement on the two Pike books, and his conclusion concerning the latter:

"In *Phonetics* the end sought was the establishing of a technique of description which would deal with the nature and formation of all sounds whether these sounds are used in language or not. Practically it sought a means to describe sounds in terms of movements of the "vocal apparatus," in terms of articulatory formulas. In *Phonemics* the end sought is the establishing of a satisfactory technique for discovering pertinent units of sound in any language and organizing them for an alphabet writing. . . . [*Phonemics*], with its step by step approach and many specific illustrations, brings the materials of one of the most important divisions of modern linguistic study within the grasp of the reader without special technical training."

Granting that *Phonemics* does this, and more, for the reader without special technical training, the present review is addressed only to those already experienced in playing with linguistic structures, as a game or as a science, or both. This review includes, furthermore, one procedural and three theoretical questions:

1. Is it necessary to set up a preliminary notation for recording texts before the phonemic system of a given language is entirely explored?

2. Is structure stateable only in terms of symmetrical features?

3. Are differences between individuals relevant to the discussion of fluctuating sounds?

4. What would the consequences be if Pike's simultaneous presentation of certain phonemes and certain morphemes were consistently followed?

Our queries can be appreciated only when Pike's four basic premises and his procedures for finding phonemes are known. The premises in question are said to serve as a foundation for the procedures which follow (p. 57): "*Phonemic procedures, then, must be founded upon premises concerning the underlying universal characteristics of languages of the world. . . .*" The premises themselves are first presented together definitively; then in a following section of the book analytic procedures, with problems, are provided for each premise. But in this review, the premises and procedures are given together (italicized material is generally quoted), without Pike's problems from artificial or artificialized languages.

[1] Part I is devoted to: Analysis and Production of Phonetic Units (chapter 1, Phonetic Symbolism, 3–11; chapter 2, Phonetic Exercises for Producing Sound Types, 12–43; chapter 3, Selections for Reading, 44–56).

[2] Part II is devoted to: Analysis and Description of Phonemic Units (chapter 4, The Premises of Practical Phonemics, 57–66; chapters 5–13 under Analytical Procedures, 67–173; chapters 14–15 under Descriptive Procedures, 174–206; chapter 16 under Orthographical Procedures, 208–226, followed by Appendix, 228–254).

[1.0] "*First Premise: Sounds Tend to be Modified by Their Environments.*" (The words 'tend' and 'tendency' are used in a special sense by Pike: to remind the student that each language of the world is unique, lest the student conclude, for example, "that sounds of one language must always slur into their environments in the same way or to the same degree as do the same sounds in similar environments in a different language.") What is numbered below as [1.1] is said by Pike to be a conclusion following from the first premise; it is a special application to sounds flanked by other sounds.

[1.1] "*Sounds tend to slur into one another and the nonsignificant varieties of a sound so produced must not be symbolized in a practical alphabet.*"

[1.2] "*. . . sounds tend to slur into silence.*" The reference here is to sentence initial and sentence final unvoicing. It is true that "a voiced sound may lose its voiced nature and thus approximate silence more closely." But the chances are that the student struggling with this kind of unvoicing will be involved in a morphophonemic rather than a phonemic problem.

[1.3] "*. . . the borders of various types of larger phonological or grammatical units may also modify sounds.*" Examples which follow this generalization show word final unvoicing, even when the words in question are not in sentence final. The assumption, not stated by Pike, is that in the artificial language treated, there is no overlapping of the voiced and voiceless sounds in word medial; if there were, the very same forms cited would have to be phonemicized differently than they are. Actually, for the examples given, not enough information is vouchsafed to phonemicize one way or the other.

[1.4] "*. . . sounds can be affected nonsignificantly by their relation to syllables which are stressed or unstressed, long or short, high or low.*" Assimilation is said to be possible or even probable for [1.4] in contrast to [1.2] and [1.3]: "*. . . sounds modified by neighboring sounds or by stress, pitch, or length, tend to become more like their environments, but that sounds modified by a border can not in the same way become 'like' a border which is merely a junction of two large phonological or grammatical units and not a phonetic entity in itself. . . .*" Nor a phoneme as such." This is less a premise or an assumption than a bias against juncture; such a bias is not useful in operating with linguistic structure, since it closes theoretical doors which might better be left open; in Bella Coola, as described by Stanley Newman, the same allophonemic variety is observed before juncture in word-final as before consonants (= 'other consonants' if one were to interpret juncture as a phoneme,—classifiable then as a consonant).[3]

ANALYTICAL PROCEDURES

[relevant to *First Premise*]

[1.A] "The Phonemic Separation of Similar Segments Upon Finding Them in Contrast in Analogous Environments" [title of chapter 6]. Phonetic data are given in brief word lists out of artificial or artificialized languages. From these the student is told to list all the letters used in writing the words, then to abstract pairs of letters which are said to represent *segments* of similar sounds, which in Pike's terminology are *suspicious*. The attempt is, apparently, to find technical terms other than *allophone*; *allophone* would beg the question: the question is which sounds go together as allophones of one phoneme, which sounds contrast phonemically. Some segments turn out to be allophones, some segments are phonemically distinct from others. Innovations in terminology include *suspicious* versus *nonsuspicious* (= phonetically dissimilar sounds); and a specialized use of *segments*; and *analogous environments*. The last refers to a similarity in two or more parallel sequences of sounds, which may be but are not necessarily identical. ("*All identical environments are analogous*, but not all analogous environments are identical."). In the discussion of

[3] Stanley Newman, Bella Coola I: Phonology, IAJL 13.132 (1947).

the procedure treated here, Pike repeats (from *first premise*) the distinction between assimilation possible when sounds are flanked by other sounds, and the relative sterility of juncture in this respect; this, as I have indicated, is nothing more nor less than a bias on Pike's part, as is his faith in the unique solution of phonemic problems, also reiterated in this procedure from an introductory statement. Where different solutions are offered by equally competent linguists analyzing natural languages, as English, Pike argues that the difficulty resides in an inadequate phonemic theory which, when repaired, will lead to one solution; so far as the procedure here considered is concerned, Pike says, "... *alternate hypotheses eventually lead the investigator to the same conclusion if he rigorously modifies, accepts, or rejects them in accordance with ALL the facts.*" This is true, not because Pike has taken the precaution to repair inadequate phonemic theory, but rather because he has taken great pains in preparing more or less artificial languages for his problems in phonemic analysis. Natural languages would indeed be less convenient.

[1.B] "The Phonemic Separation of Similar Segments Upon Finding Them in Contrast in Identical Environments" [title of chapter 7]. The treatment is parallel to [1.A]; the terminology is the same, but for reasons given by Pike, considerable emphasis is given to the distinction between *analogous environments* and *identical environments*, which is also the only difference between the titles for chapters 6 and 7. ("... *contrast in identical environment is merely an instance of contrast in a specific kind of analogous environment.*") There may be, as Pike says, beside minimally contrastive pairs in any language, also minimal triplets, or even more than three words which are minimally different. In my own experience, I have found that some languages yield minimally contrastive morphemes of one sort or another upon inspection, as it were, while for other languages one may peruse whole dictionaries of morphemes, and then have to content one's self with positional variants in terms of equivalent sound classes (Pike's analogous environments): it never seemed to make much difference to me so far as phonemic analysis was concerned, although I would always grant that minimally contrastive pairs are more elegant for presentation in formal publication. But then, I have always worked with bilingual informants. One can appreciate Pike's enthusiasm for minimally contrastive pairs if one remembers that Pike has had much experience in working with monolingual informants.[4]

[1.c] "The Phonemic Uniting of Similar Segments Upon Finding Them in Mutually Exclusive Environments" [title of chapter 8]. The treatment is parallel to [1.A] and [1.B], but much longer and introduces morphology as well as new terms, as phonemic syllable (p. 90). Sounds in complementary distribution (Pike's mutually exclusive environments) are variants of the same phoneme, if they are phonetically similar. The need for phonetic similarity is discussed under Uncertainties in the Application of Phonemic Premises (p. 63). The use of simplified language materials leads to a slight oversight, namely of allophones which are in complementary distribution under certain kinds of word stress, not in others; I have described this for Tübatulabal,[5] while Hockett has not only described it but even rationalized it for Ojibwa.[6] For tones, there is "intersection of

[4] "Once minimally different word pairs are discovered in an actual language, they are useful in two other ways: (1) *They may serve to convince the investigator that between certain words there is actually a significant phonetic difference which he has previously overlooked.* ... (2) The other advantage is that *pairs of words of this type may be used by the investigator for practicing purposes, to help him learn to differentiate readily between sounds which to him appear so similar that they cause him difficulty.*"

[5] C. F. Voegelin, Tübatulabal Grammar, UCPAAE 34.55-6 (1935).

[6] Charles F. Hockett, Implications of Bloomfield's Algonquian Studies, Lg. 24.123-4 (1948). We have in this instance Bloomfield's own state-

phonemes." (p.66). Discussion of the Pike heresy—introducing morphological considerations in phonemic analysis—is reserved for the final question of this review.

[1.P] "Analytical Procedure One Amplified for Special Application to Problems of Pitch" [title of chapter 9]. In working with segmental phonemes, the procedures as stated lead the analyst from one phoneme to another phoneme, and so on until all sounds are accounted for. In working with pitch, the analyst needs first to make an either-or decision. Either the language he is working with is tonal, or it is not. To make this decision, Pike advises the use of minimally contrastive pairs. Suppose that a given language turns out to be tonal. The next step is to determine the type of tone language. If the language has only level tones as basic tone phonemes, it is said to have a REGISTER system. If the language has basic gliding pitches, it is said to have a CONTOUR system. A third type of language (a non-tone type) may have significant INTONATION CONTOURS. The three types are easily confused. A register system may have combinations of level tonemes which appear phonetically as glides. So also, certain combinations of tones in a contour system may give the impression of level tones, as though one were dealing with a register system. A contour system can be distinguished from intonation contours: the latter apply to phrases, and mark attitudinal meanings, while the former apply to syllables and mark lexical meanings. ("*The tone forms basic to a tone language are usually those which occur on the shortest structural units of that language* —on short vowels, single short syllables, or on short morphemes.") Tones, like segmental sounds, appear in complementary distribution. Sequences of parallel tones may also be compared. But in general for tones "*. . . words are studied in context rather than in isolation*. . . . They are so selected that within a single sentence or single phrase one of the words may be withdrawn and another put in its place. . . . Such a sentence may be called a FRAME. The replaceable words may be called a SUBSTITUTION LIST." A fuller exposition of the use of the frame and substitution list is contained in Pike's forthcoming book, *Tone Languages*.

The problems dealt with in the first premise and its procedures are concerned with positional variants in general, and in particular with finding allophones in complementary distribution.

[2.0] "*Second Premise: Sound Systems Have a Tendency Toward Phonetic Symmetry*." This applies to segmental phonemes, but also to tonal systems and to stress systems. Symmetry is equated to structural pressure.

ANALYTICAL PROCEDURES [relevant to *Second Premise*]

[2.A] "Phonetic Symmetry as a Supporting Criterion for Separating or Uniting Phonemes." This constitutes an addendum to procedures given under the first premise.

[2.B] "Lack of Symmetry as a Clue to Possible Error." Lack of symmetry is equated to a hole in the pattern of a particular language. Since a sound may be overlooked because it is rare, the problem of symmetry inevitably merges with the problem of statistical frequency of sounds. The latter, interestingly enough, was given greater emphasis than symmetry by Boas.[7]

[3.0] "*Third Premise: Sounds Tend to Fluctuate. . . . If this fluctuation is between noncontrastive segments it is structurally nonsignificant and should not be symbolized in a phonemic alphabet.*" It is quite clear from the discussion that phonemes are established

ment about the implication of the analysis cited by Hockett: that we were not able to hear the distinction in question, but that the Ojibwa speaker probably could, as could we if we worked long enough with Ojibwa (assumption that the *linguist* was under-trained in this particular respect). Cp. Pike's discussion (p. 141) of a similar problem and his assumption that the *speaker* has underdifferentiated.

[7] Franz Boas, Kwakiutl Grammar with a Glossary of the Suffixes, TAPS 37.210 (1947).

on the basis of positional variants (= procedures attached to the first two premises); only then can fluctuations, or in other words free variants, be defined. Having defined the free variants of a given language, their relationship to the phonemic system of that language is, according to Pike, either relevant or irrelevant, depending on the evidence which the positional variants alone yielded. If the positional variant data led the analyst to the conclusion that the language in question makes a phonemic distinction between voiced and voiceless stops, then it is relevant to note whether the free variant data shows a stop in a given position to be sometimes voiced and sometimes voiceless. The form in which this free variant appears will have to be written now with a voiced phoneme and at another time with a voiceless phoneme. (We would say that this form appears in two morpheme alternants.) If, however, the positional variant data led the analyst to the conclusion that the language in question has only one series of stops (i.e. does not make a phonemic distinction between voiced and voiceless stops), then it is irrelevant if the free variant data shows a stop in a given position to be sometimes voiced and sometimes voiceless. The form in which this free variant appears will be written in one and the same way, irrespective of whether a voiced allophone or a voiceless allophone is heard. (We would say that this form appears in one phonemic shape.) The underlying but unstated assumption here is that not only are certain steps or procedures applicable to phonemic analysis, as given by Pike, but also that the relative order in which these procedures are applied is crucial to the analysis. Work with positional variants necessarily precedes work with free variants; conversely stated, it is impossible to come to any phonemic conclusions if analysis of free variants precedes the analysis of positional variants of a given language. There are obvious theoretical difficulties in the entire discussion of fluctuations.

ANALYTICAL PROCEDURE [relevant to *Third Premise*]

[3.A] "The Phonemic Uniting of Similar Segments Upon Finding Them Freely Fluctuating But Never in Contrast" [title of chapter 11]. To translate into the usual technical terminology of American linguistics, this procedure might be expected to be concerned with the complementary distribution of free variants. The actual problems presented, however, show also overlapping distribution of free variants, and involve matters of different speech styles, in terms of *WEAK forms* (or RAPID forms), precise *pronunciations, norm*, and *speech of normal* (or slightly slow) *speed*. ("... *the student does well to consider as the normal pronunciation that variety which occurs in normal conversation rather than in the extremely slow style*. Here the substitution because of style is from one submember of a phoneme to another submember of the same phoneme.") Instead of analytical procedures, the beginner is here offered advice. It is quite often possible to operate within the framework of rigorous phonemic procedures in distinguishing one style from another, as Garvin has shown for Kutenai.[8]

[4.0] "*Fourth Premise: Characteristic Sequences of Sounds Exert Structural Pressure on the Phonemic Interpretation of Suspicious Segments or Suspicious Sequences of Segments.*" This premise, and the analytical procedures which illuminate it (given in chapters 12 and 13) are concerned largely with two more or less dubious units called PHONETIC SYLLABLES and PHONEMIC SYLLABLES. These units are

[8] Paul L. Garvin, Kutenai I: Phonemics, IJAL 14.37 (1948): "Kutenai has two styles; style II differs from style I by a more limited distribution of certain phonemes and allophonic features, and by the occurrence of contours containing more than one polysyllabic word. Style I is more careful, more deliberate and formal, and sometimes slower than style II. A given utterance can be spoken in either style or in both [i.e. one part of the utterance in one style, the other in the second style]."

not treated in the present critique because they are marginal to the central problem of phonemicizing languages.[9] Occasional references in the description and support of the fourth premise are made to the use of morphology in phonemic analysis,—these references are discussed in the final question of this review.

1. Is it necessary to set up a preliminary notation for recording texts before the phonemic system of a language is entirely explored?

Judging from the kind of phonetic data utilized in the procedures discussed above, we may suppose that Pike has assumed that the student would progress from phonetically written word lists (and some texts) to a phonemic orthography. Pike realizes, of course, that procedures which serve to find phonemes may also serve to accustom the student's ear to the allophonic peculiarities of the language he is recording; he says as much in various contexts, for example, p. 81: "... *the investigator must carefully check with his informant to see that all words which are used for crucial evidence in arriving at phonemic conclusions are properly recorded.*" Pike probably advises his students to record texts as soon as possible with as much phonetic detail as possible (subject to revision).

This appreciation of the use of phonemic analysis for ear-training is, however, quite incidental,—and it is no more than incidentally realized in the phonetic-phonemic literature in general. Assuming that people will work with informants only after they are properly trained phonetically, we may safely prescribe phonemic analysis before extensive text recording. However, knowing that people (perhaps perversely, but nevertheless actually) are inclined to go to the field to work with informants today, as did all anthropologists yesterday, with a preliminary orientation in phonetics instead of adequate phonetic training, we would do well to change our prescription for beginners.

For a prescription which would serve students as they are actually equipped phonetically (rather than as they ought to be equipped), we would not call for recording all perceptible sounds in a new language; we would instead advise beginners to under-cut the phonetic record, to devise a deliberately simplified notation with which they could record translatable texts. Only one thing would be asked of this notation: that upon reading it back to the informant, the informant could translate the text which he dictated into a language known by himself and the investigator. To this notation the field worker would then add phonetic detail gained by listening to the informant repeat parts of the text during the process of translation.

A phonemic analysis would emerge, whichever approach were followed,—somewhat sooner in the traditional approach of putting off text recording until a more or less complete phonemic orthography is found; somewhat later by beginning with an oversimplified notation and adding phonetic detail while texts are being recorded and translated. The latter is perhaps the only approach which a beginner can follow,—a beginner not thoroughly grounded in phonetics; what he lacks in general phonetics, he gradually learns by finding distinctions in natural languages of the world. There is no reason why a student should not make simple phonetic records of many natural languages, and attempt to phonemicize these languages as he is able to add the necessary phonetic detail to his recording. It is even possible to conduct university classes in this way, by bringing several informants a semester to a

[9] This may seem a strange thing to say for one who has analyzed the phonemes of a language in terms of syllabic-initial and syllabic-final; but in that analysis (Shawnee Phonemes, Lg. 11.23–27), I first collected consonant allophones, and then noticed that their distribution could be stated in reference to vowels—before or after—(as well as to utterance initial or final); the definition of the syllable in Shawnee was deliberately circular,—a device of convenience for giving the distribution of consonant allophones.

class, which is then devoted neither to phonetics nor to phonemics exclusively, but to a combination of both.

Most beginners have no choice: their background (or lack of background) obliges them to follow the second prescription, even if the first were demonstrated to be better for those already trained in phonetics. To be neutral, let us assume that neither the one nor the other approach is, per se, more efficacious than the other. To test this, one may write a text in three ways: (A) over-differentiated phonetically, (B) under-differentiated phonetically, (C) in phonemic orthography,—and then ask how expensive, in time and energy, the production of (A) and (B) are; and imagine phonemic analysis without a preliminary (A) on the one hand, and without a preliminary (B) on the other hand. To produce (C), we must obviously begin with either (A) or (B); of the latter two, (B) can be produced after a few days' preliminary experimentation in writing a new language, while (A) can be produced only after weeks of such experimentation by a phonetically trained student. However, a phonemicist can theoretically convert (A) into (C) without having heard the particular language in which text (A) is recorded, but to convert (B) into (C) it is necessary to have an informant available and willing to repeat parts of the under-differentiated texts, as mentioned above.

Converting (A) into (C) suffers from the same practical difficulty, however, because what the best trained ear actually records is determined by the accident of the individual's linguistic background (as Bloomfield has pointed out in a much cited passage of his book Language[10]). The conclusion is, therefore, that whether one begins with a phonetically over-differentiated text (A), or an under-differentiated one, (B), it is necessary to check again and again with native speakers before arriving at a text identified entirely in terms of phonemes, (C); this necessity derives from the fact that the phonetically over-differentiated text (A) is not to be confused with a record of all the perceptible sounds of a particular language. Such a record is not obtainable in phonetic transcription.

[10] Bottom of p. 84 and top of p. 85.

2. IS STRUCTURE STATEABLE ONLY IN TERMS OF SYMMETRICAL FEATURES?

Pike contrasts symmetry with lack of symmetry; I should rather contrast symmetry with asymmetry, and then speak not only of the symmetrical nature of language, but also of the asymmetrical nature of language. There appears generally to be an esthetic satisfaction in finding symmetrical features in any system,—witness the expensive ingenuity expended by Trubetzkoy and some of his followers who operate with sounds in terms of acoustic rather than productional descriptions partly, I suspect, because the resulting picture appears, superficially at least, to be more symmetrical than when one operates with productional features of sounds.[11] But even those of us who work with sounds in terms of productional features highlight symmetry, and treat asymmetry as a waste-basket. When two phonemic systems are compared (structurally,—not as part of the comparative method), it is usually the symmetrical features which are compared, while the asymmetrical features are left unmentioned. This is of course unnecessary.

Symmetry, as indicated in my comment on Pike's second premise, is hard to distinguish from the problem of statistical frequency. Other statements in Pike's book are also concerned with symmetry, including much of the fourth premise where *Characteristic sequences* may be translated as *features of*

[11] Devices for obtaining greater symmetry have been extended beyond sound features of a language to morphemes; see now Thomas A. Sebeok, Finnish and Hungarian Case Systems: Their Form and Function. Acta Instituti Hungarici Universitatis Holmiensis Series B. Linguistica: 3 (Stockholm 1946).

symmetry so far as sequences are concerned; *structural pressure* may be translated as *the influence of symmetry on one part of a system in the interpretation of another part of the system*. Compare now other problems involved when the fourth premise is 'amplified' to serve as a basis for determining whether certain sounds are consonantic or vocalic (p. 61):

"Characteristic sequences of sounds exert structural pressure in line with the predominant syllable structure, or the word or morpheme structure, which tends to force the interpretation of certain sounds as consonants or vowels, or as phonetically complex phonemic units.

"Structural' pressure occasionally forces the investigator to interpret a single segment as containing simultaneously a consonant and a vowel; or forces him to consider certain weak vocoids as constituting nonsignificant transition sounds. Structural pressure may affect the phonemic interpretation of single short segments, or sequences of segments, or long segments, or transition segments."

Pike's attempt to show how to phonemicize phonetic evidence which is ambiguously vocalic-consonantic is based on an ancillary premise, number (3) cited below, as well as on the general assumption that considerations of symmetry will 'force' a unique solution.

"(3) Phonemes exist."

The Platonic assumption (number 3) and symmetry are the court of final appeal for answering Y. R. Chao,[12] and for asserting, per contra, that in phonemic problems there is a unique solution. If structure is also stateable in terms of asymmetrical features, then so far as this particular argument is concerned, Chao remains to be answered.

3. ARE DIFFERENCES BETWEEN INDIVIDUALS RELEVANT IN THE DISCUSSION OF FLUCTUATING SOUNDS?

[12] Bull. Inst. Hist. Phil. (Academia Sinica) 4.363–97 (1933).

The procedures in Pike's book "are made for application to linguistic material as spoken by one individual, in a more or less uniform style." (p. 66). This would seem to be, generally stated, what Bloch has called an idiolect: "The totality of the possible utterances of one speaker at one time in using a language to interact with one other speaker is an *idiolect* . . . As for the words 'at one time', . . . they are included in the definition only because we must provide for the fact that a speaker's manner of speaking changes during his lifetime. The phrase 'with one other speaker' is intended to exclude the possibility that an idiolect might embrace more than one STYLE of speaking. . . ."[13]

The actual discussion of fluctuating sounds in Pike's book is almost entirely concerned with different idiolects, whether the fluctuation is between one allophone and another allophone of the same phoneme (as between rapid, normal, slightly slow, or slow and precise styles), or whether the fluctuation is between one phoneme and another phoneme. Differences in style of the same individual are emphasized above difference between individuals.

This is about as far as Pike goes. The matter of free variants in the speech of a single individual—of one idiolect, to restrict the corpus more precisely—is scarcely touched upon. Whatever such free variants may turn out to be,—which we will discover after someone takes the trouble to write a descriptive monograph on a single idiolect,—I would be willing to guess that free variants in single idiolects partially reflect other idiolects. My guess is based on two observations: (1) my own adjustments in conducting long discussion conversations with friends,—before such conversations are over, I have adopted some morpheme alternant or allophonic peculiarity of my friend's, and he of mine; at the same time we retain our original allophones and morpheme

[13] Bernard Bloch, a Set of Postulates for Phonemic Analysis, Lg. 24.7 (1948).

alternants as free variants of the borrowed ones; (2) whenever I work with one informant in an American Indian speech community, I begin to wonder which phonetic variants in his idiolect are positional and which are free: to test this, I make a list of a score or two of key words, and try to encourage other members in the speech community to utter the key words; if the variants in question prove to be different in the various idiolects of the particular speech community, I am inclined to think that they are free variants in the speech of my informant. Further work may show that they are positional variants in his speech; but generally speaking, differences between individuals in one speech community serve as a guide to free variants in the speech of one individual of that community. What is often sensed as a weakness—a description of a language based entirely on the speech of one informant—is at bottom a realization that free variants are difficult to find without a knowledge of the range and magnitude of variations among idiolects.

4. WHAT WOULD THE CONSEQUENCES BE IF PIKE'S SIMULTANEOUS PRESENTATION OF CERTAIN PHONEMES AND CERTAIN MORPHEMES WERE CONSISTENTLY FOLLOWED?

Structural linguistics, as exemplified in recent analyses of natural languages, presents phonemics at one end of a study, a treatment of morphemes at the other end, and between the two morphophonemics. In finding the phonemes of a given language, many workers, including the present reviewer, adopt a preliminary notation (see our first query). With such a notation in use, workers are able to record texts and begin morphological analysis. By learning which prefixes and suffixes may be attached to which bases, for example, the worker can then gain a certain control over potential phonemic sequences; in effect, this amounts to rapid production of texts or text-like material (elicited from and checked with informants directly). This is especially suitable for the final stages of phonemic analysis. It used to be called 'cheating' at the Linguistic Institutes, as though one were playing a game in which the rules were to proceed phonemically while observing a tabu on morphological inquiry. The 'cheating' accusation was always playful, because it was clear that phonemic analysis could be completed before morphological analysis was begun,—by merely making reference to long texts for different environments of different phonemes instead of eliciting one word texts from informants through some control of potential combination of morphemes. Besides such playful accusations, workers in explaining their field methods at the Linguistic Institutes, would frequently confess they were 'cheating', i.e., assembling new environments for phonemic analysis from some control of morpheme distribution; but such confessions implied, clearly enough, that the worker regarded phonemic analysis as wholly independent of morphological analysis.

Pike does not. He offers the following as part of an ancillary premise (p. 62): "*Before phonemic analysis can be completed, at least some morphemes must be differentially identified...*" They may well be in the actual practise of certain workers, but I fail to see why this has any theoretical interest, much less theoretical compulsion. Nor is the supporting example (English *pin* differentiated from *bin*) impressive: it is possible to make a phonemic analysis without minimally contrastive pairs of morphemes.

We are indebted to Murray Emeneau for giving us a pair of utterances in which the identical stress accent falls on (1) *pin*, and (2) *been*, and for pointing out that *been* is probably two morphemes.

(1) 'Have you a *pin*?'

(2) 'Have you *been* here long?'

It is hard for me to appreciate how the knowledge of the morphemic interpretation (about *been* in contrast to *pin*) could possibly add to or detract from the problem of attesting the English contrast of /b/, /p/.

It is certainly elegant to compare two forms, like *pin* and *been*, each flanked by open juncture and otherwise identical except for the initial stop. But when Bloomfield in his Language (p. 82) compares /k/ and /hk/ and /ʔk/ in Menomini, the first appears in a sequence (akäh-) flanked by open juncture on one side, the last two in sequences flanked by open juncture on both sides; strictly speaking, only the last two constitute a minimally contrastive pair:

(1) akähsemen *plum*
(2) ahkäh *kettle*
(3) aʔkäh *yes, indeed*

Again, whether (1) consists of a single morpheme or two or more morphemes strikes me as irrelevant to phonemicizing; and are we to hold that the phonemic contrast involved in (2) versus (3) is better attested than that in (2) or (3) versus (1)?

The following ancillary premise reflects a serious confusion between phonemic sequences, and morphemes (p. 63): "*In some languages considerable grammatical analysis, based on phonetic data, is prerequisite to phonemic analysis since spaces and hyphens must be written at certain types of grammatical units*, and *subphonemic modifications may occur at their borders.*" This confusion would have been avoided, had Pike stated his hyphens and spaces as two kinds of juncture phonemes; then the morphemes in question could be defined entirely in terms of phonemes.

Despite my stricture, I agree with Pike when he says (p. 67) "Phonetic, phonemic, and grammatical analysis should proceed together." We agree that in exploring it is efficient for the explorer to look at as much of the landscape as he can at one time, and if he has good periphery vision so that he can see things to the right and left of him as well as what is directly in front of him, so much the better. Presentation is another matter: I would present phonemes and arguments concerned with phonemes only in terms of sounds and sound sequences.

Pike's procedure [1.C] includes discussion of both grammatical and phonological units, —the former are listed as morphemes, words, clitics, phrases, utterances; the latter as phonemes, syllables, stress groups, rhythm groups, intonation groups, utterances; and in many instances, it is said, the two kinds of units coincide. Furthermore, the latter are said to be more difficult to identify than the former. This is surely questionable, for while a morpheme in a particular language which has a unique shape is easy enough to identify, another morpheme which appears as many morpheme alternants presents difficulties equal to the most delicate phonological nuances; Pike, however, seems to come to the opposite conclusion when he discusses (p. 92) the difference between fast speech forms and slow speech forms. His position is consistently clear: "... subphonemic modification will be described in reference to grammatical or phonological environments, or a combination of them."

Under [4.A] Pike lists (1) high vocoids [i], [u], [ü], (2) retroflex central vocoid (r), (3) voiceless vocoids of any quality, (4) = (3), with glottal friction, (5) lenis voiced velar fricatives; and says "The sound types just listed [(1) to (5)] will function as consonants or vowels according to the place in which they occur in basic phonological and grammatical units..." We would say that the sound types in question, (1) to (5), are classifiable as consonants or vowels according to their distribution; what is gained by introducing morphemes here? It does make a difference, for if the phonemes are first neatly classified, then the morphemes can be in part described as one or more phonemes; if the phonemes are defined by features which include morphemes, can we subsequently set up morphemes in terms of their phonemic constituency?

Morphemes are introduced to help solve phonemic problems where vocalic-consonantic classification is ambiguous; they are not introduced when the classification is unambiguous. For *unambiguous*, Pike uses one of his favorite terms (in a sense unre-

lated to the use of the same term under [1.A], above), namely *nonsuspicious* sounds. These he lists and contrasts to the sound types which we have numbered (1) to (5) above: (6) stops, (7) fricatives, (8) nonsyllabic nasals and laterals, (9) low or mid vocoids. Of these, (9) will be vowels, (6), (7), (8) consonants, irrespective of morphemes.

Under [4.C] Pike says, "*When a word or morpheme border interrupts a long consonant, that long consonant is usually composed of two short phonemes in sequence.*" In some Algonquian languages, long t· is distinguished from tt because each t of the latter is released, irrespective of morpheme boundary. Of course, morpheme boundaries have to be considered: but we would say in morphophonemics rather than in phonemics. We can in this context give a partial answer to our final question (**4**): one consequence of a simultaneous presentation of phonemes and morphemes is that morphophonemic considerations are avoided, as Pike avoids them in general. In a somewhat parallel way Franz Boas was inclined to avoid phonemic considerations by recognizing only a narrow phonetic transcription, on the one hand, and morphophonemic symbolization on the other.

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CRITICAL AND COMPARATIVE GRAMMAR OF THE CUNA LANGUAGE. By Nils M. Holmer. Etnologiska Studier 14. Göteborg, 1947. 219 pp.

1.0. Holmer's Cuna (San Blas Coast, Panama) grammar is based on K. G. Izikowitz's grammatical notes, prepared as a result of contact with a Cuna informant in Sweden in 1931, on phonograph records taken then, and on bibliography.[1] Principal divisions of the book are as follows: Introduction; I. Phonetic System. Description of the sounds; II. Historical Aspect of the Cuna Language; III. Grammatical Sketch; IV. Conclusion. Position and classification of the Cuna language; Bibliography. Categories employed in the Grammatical Sketch are: noun: concrete nouns: singular and plural, totality form, possessive prefixes; adjectives; numerals; pronouns: personal, demonstrative, interrogative, indefinite; relative construction. Verb: verb noun; prefix vowels; personal inflection; temporal and modal inflection: present, future, preterit; passive; auxiliary verbs; participles; gerunds. Particles and indeclinable words: adverbs; postpositions; conjunctions: original enclitics, original postpositions, original verbal forms, original adverbs, original connective; interjections. In comparative statements Holmer cites languages and language groups: Algonkin, Algonquian, Anglo-Saxon, Arawak, Aruba (Caquetío), Aymara, Aztecan, Baniwa, Barbacoa, Baré, Basque, Bauré, Blackfoot, Bribri, Cacaopera, Catawba, Caucasian, Celtic, Chibcha, Chiripó, Chiriquí, Chocó, Choctaw, Coptic, Cree, Dakota, Egyptian, English, French, Georgian, German, Goajiro, Greek, Guaraní, Guatuso, Guaymí, Hebrew, Hidatsa, Ipéka, Iroquoian, Kagaba, Katapolítani, Latin, Lenca, Maya, Miskito, Moxo, Muysca, Nahuatl, Narragansett, Northern Peruvian, Norwegian, Ojibway, Old Norse, Pacific Coast Languages, Paez, Pipil, Portuguese, Quechua, Quiché, Rama, Russian, Serbian, Shoshone, Sínsiga, Siouan, Siusí, Slavonic, Spanish, Spanish American, Talamanca, Timuqua, Tunebo, Uto-Aztecan, West Patagonian, Yukúna. A generalized comparative conclusion is: "... Cuna (with Kagaba, etc.) was at one time independent of Chibcha and perhaps of a now extinct type, which is the basis of, or has exerted an influence on, certain Arawak and other languages." (p. 217).

1.1. Holmer's statements. Most of the statements listed below are quoted to illus-

[1] See also: N. M. Holmer, Outline of Cuna Grammar, IJAL 12.185–97 (1946).

trate certain of Holmer's referents in linguistic comparison. 1. "Assuming the primordial existence of ə in the Amerindian languages, we might trace the evolution of this vowel by a simple application of a statistical method, from the relative frequency of the vowels in the respective languages." (p. 27); 2. "Initial vowels in the Amerindian languages often differ from corresponding sounds in English and Spanish. Owing to the rather general absence of the aspirate (h) as a phonological unit, the firm initial articulation which distinguishes for instance English 'old' from 'hold' can be dispensed with." (p. 29); 3. "The Amerindian languages, owing to their agglutinative character, are characterized by long word units (cf., for instance, Algonkin and Quechua). Along with this peculiarity follows an opposite tendency, found in language in general, namely that of reducing long stress units to shorter ones." (p. 33); 4. "We may assume that from time immemorial two tendencies have been active in the Amerindian languages: the agglutinative tendency and the tendency to shorten long stress units." (p. 42); 5. "In this connection it is necessary to be reminded of the fact that no determinative element ever expresses a primitive idea of "round object" etc. The reason why similar statements are so often made in linguistic works is partly that the primitive signification is usually unknown, partly that, in cases where we might arrive at a concrete sense, this sense seldom covers the meaning of any general term in any European language." (p. 54); 6. "A Cuna word cannot be distinguished as a noun, verb, postposition, etc., unless its meaning and syntactical function is known. There are even inflective forms not differentiated as of the nominal or verbal class of words. This is a common trait of the Amerindian languages at large, as well as of agglutinative languages in general. The uniformity of the different parts of speech in these languages depends on the fact that nouns and verbs were not originally distinguished as to form, which implies that theoretically any concrete or descriptive (adjectival) noun may be verbalized... and that any verb may be used as a verbal (abstract) noun. Since the distinction of the parts of speech is based on the fundamental division into nouns and verbs, it is clear that all other parts of speech can be only vaguely differentiated." (p. 83); 7. "The distinction between substantives and adjectives is not based on historical principles; for practical reasons, however, it is advisable to deal separately with name words (concrete nouns or substantives) and descriptive nouns (adjectives)." (p. 85); 8. "Case inflection does not exist; the expression of the possessive case will be explained in a chapter dealing with possessive forms." (p. 85); 9. "As regards the form of the possessive prefixes we notice that, as in most Amerindian languages, they are made up of a basic consonant, carrying the meaning, and a following connecting vowel; sometimes, as in the third person, there may be no consonant element." (p. 95); 10. "The personal pronouns in the Amerindian languages are usually not construed as grammatical subject or object of a verb; for this function personal prefixes or suffixes are used." (p. 105); 11. "Relative pronouns are almost universally absent in the Amerindian languages and relative construction is at a rudimentary stage." (p. 111); 12. "We may distinguish between three classes of verbal forms in the Amerindian languages: (1) the finite forms (which represent the highest stage in the verbal evolution), (2) gerundial forms, and (3) verb nouns (including participles and analogous formations)." (p. 112); 13. "The conceptions of tense and mode have strictly no correlatives in the Amerindian languages. What we call tense is intimately connected with time, but analogous forms in the American languages are, historically at least, related to other aspects, such as locality, etc., and the various modes in our sense of the word are seldom expressed at all and in any case quite independently of

the tenses." (p. 128–9); 14. "Participles play an important part in all Amerindian languages . . ." (p. 167); 15. "The gerundial forms in the Amerindian languages are used in a parenthetical way, as when it is found superfluous to state person, number, or tense, etc.; nevertheless, this form is not always impersonal." (p. 171); 16. "The Amerindian sentence building differs fundamentally from the European; what is with us a subordinate form is among the Indians rather an accidental or accessory form, denoting a verbal action of secondary importance for the general context." (p. 177); 17. "It does not appear to the European mind that they are strictly subordinated to anything in particular, whence the special shade of meaning they convey may be difficult to render in the European languages." (p. 177); 18. "Similar to practically all American languages, Cuna uses postpositions instead of prepositions." (p. 185); 19. "It is a remarkable fact that most Amerindian languages use a particle of this, or a similar, form, either as a co-ordinate or a subordinate conjunction, or as both." (p. 199); 20. "It may be surprising to the ethnologist to find that the wealth of a language of such relatively small importance is quite out of proportion to the number of ethnical characteristics within the same area. In other words, language is less a product of a nation's general civilization than of its history and individual thinking. There is hardly a phrase in a spoken language, however unimportant, that may be fully understood by those who are not acquainted with the circumstances in which it was first created or have heard nothing of those who first used it." (p. 203).

2.0. Holmer hypothecates historical priority sequences for certain phonological, morphological, and semantic units in Cuna relative to compared language corpora which are primarily those of closely related languages (cf. 1 in **2.2** below). The organization of Cuna materials according to linguistic categories yields primary statements, with compared forms variously subattached (cf. 1 in **2.3** below).

2.1. Comparative ± historical grammars. It may now be appropriate to discuss some organizational factors which may contribute to the construction of structural grammars when comparative ± historical techniques of analysis are involved. The units and categories proposed below are parenthetically labeled so as to clarify the formula in **2.6.**

2.2. Selection of language complex. A language complex (LC) consists of multiple language corpora (c) juxtaposed for combined analysis according to stated criteria of selection. Selection may be governed: 1. by putative language family interrelationships; 2. by putative maximal family contrasts, areally or cross-areally[2]; 3. by putative structural similarities and contrasts[3]; 4. at random, with size of complex controlled by the investigator's arbitrary decision to handle n. languages.

2.3. Definition of techniques of analysis. Techniques are: distributional (D), semantic (S), comparative (C), historical (H). For comparative ± historical structure it is supposed that comparative ± historical techniques are superimposed upon a technical framework which consists of distributional ± semantic techniques. The latter may be applied to the complex of language corpora as follows: 1. by referent-referee system, with structural categories established for a single corpus (= referent corpus) of the complex and all the other corpora (= referee corpora) of the language complex

[2] E.g. areally, the analysis of Galla, Ibo, Zulu, and Bushman for Africa; cross-areally, the selection of Yuchi and Cherokee (America) along with Ful and Hottentot (Africa).

[3] Possibly with respect to the vaguely descriptive labels: agglutinative, isolating, polysynthetic, etc. as they appear in some linguistic surveys.

handled according to these categories; 2. with categories based on the total linguistic data of the language complex; 3. with categories separately determined for each corpus of the complex; 4. with categories established according to linguistic traditions[4]. For each case comparative ± historical techniques may be applied to the resultant category structures.

2.4. Resultant structures. Resultant structures may be complex structures (CS) composed of single referent (1, 2, 4 in **2.3**) or multiple referent (3) categories and statements.

2.5. Multiple analyses. Multiple analyses (^{n}) may be practised on the separate corpora (by 3 in **2.3**) or on the complex (by 1, 2) for whatever reason, relative to the final structural statement of the complex.

2.6. In accordance with the above, complex structure may be stated in formula thus: CS = [C ± H (D ± S)] (LC) = D ± S (c)^{n}. This reads: complex structure results from the application of comparative ± historical techniques to a complex of language corpora which is structuralized according to distributional ± semantic techniques, or it results from the application of distributional ± semantic techniques to the separate corpora of a complex of languages, with an indefinite number of variant analyses possible.[5]

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[4] E.g. the pre-adoption of Latin categories, into which the data in question may be pressed.

[5] The comparative ± historical techniques mentioned in this paper may be variously formulated, with predictable differences relative e.g. 1. to the degree of acknowledgment (by statement) of the precise criteria by which proto-language units (i.e. phonemes, morphemes, morpheme sequences) are derived from recorded data; 2. to definitions of the logical status of the derived proto-language units. A rigorous acknowledgment (1.) could lead to the definition of proto-language units as complex units equivalent by terms of the technique of derivation to the units on the basis of which they were derived, with the latter stated as alternants of the proto-language units (2.). This would effectively eliminate argument as to whether proto-language units in any way represent languages once spoken. Statements of purpose in linguistic investigation would also be side-stepped. The proto-language units would be construed simply as the result of the technique used in deriving them, and possibly as a convenient shorthand by which to represent certain characteristics of a language complex. Cf. C. F. Hockett, Implications of Bloomfield's Algonquian Studies, Lg. 24.117–31 (1948) for pertinent discussion of Bloomfield's comparative-historical work in Algonquian (based on LSNA 85–129). See also: R. I. Avanesov, Voprosy foneticheskoi sistemy russkikh govorov i literaturnogo yazyka [Questions on the Phonetic System of the Russian Dialects and the Literary Language], Izvestiia Akademii Nauk SSSR: Otdel. Lit. i Yaz. VI: 3, (1947) p. 216, where "polyphonemes" are suggested as elements similar to the complex units just referred to.

GRAMMATICAL PREREQUISITES TO PHONEMIC ANALYSIS. By Kenneth L. Pike. Word 3.155–72 (1947).

PROBLEMS IN THE TEACHING OF PRACTICAL PHONEMICS. By Kenneth L. Pike. Language Learning 1, no. 2, 3–8 (April 1948).

THE ANALYSIS OF GRAMMATICAL CONSTITUENTS. By Eugene A. Nida. Language 24.168–77 (1948).

LINGUISTIC AND ETHNOLOGICAL ASPECTS OF MAZATECO KINSHIP. By Florence Hansen Cowan. Southwestern Journal of Anthropology 3.247–56 (1947).

GREETING FORMS OF THE GULF AZTECS. By Howard W. Law. Southwestern Journal of Anthropology 4.43–48 (1948).

THE HOMSHUK: A SIERRA POPOLUCA TEXT. By Ben Elson. Tlalocan 2.193–214 (México, 1947).

"THE HOLY BELLS" AND OTHER HUAVE LEGENDS. By Milton Warkentin and Juan Olivares. Tlalocan 2.223–34 (México, 1947).

UNA VISITA A LOS INDÍGENAS AMUZGOS DE MÉXICO. By George M. Cowan. Anales del Instituto National de Antropología e Historia 2.293–301 (México, 1947).

NOMBRES CLASIFICADORES CHONTALES.

By Margaret Harris. Anales del Instituto Nacional de Antropología e Historia 2.303–06 (México, 1947).

PALABRAS Y FRASES DE LAS LENGUAS TARAHUMARA Y GUARIJÍO. By Kenneth S. Hilton. Anales del Instituto Nacional de Antropología e Historia 2.307–13 (México, 1947).

MAZATECO: LOCATIONAL AND DIRECTIONAL MORPHEMES. By George and Florence Cowan. Aboriginal Linguistics 1.3–9 (Cuernavaca, 1947).[1]

MIXTECO: COMPLEX PHONEMES. By Donald S. Stark. Aboriginal Linguistics 1.10–15 (Cuernavaca, 1947).

DICCIONARIO ESPAÑOL-ZOQUE Y ZOQUE-ESPAÑOL. By Roy and Margaret Harrison. Summer Institute of Linguistics, 1948. Mimeographed, pp. v, 85, 85. $1.00 (limited edition).

This review is an abstract of linguistic papers by members of the Summer Institute of Linguistics which have been published during the past year, exclusive of items published in IJAL.[2] Except for the last item listed, the materials have appeared as articles in technical journals. Reprints of most of these are available upon application to the Summer Institute of Linguistics, Box 870, Glendale 5, California. In addition to the linguistic papers by members of the Institute cited here there have appeared during the year a number of semi-popular articles of an ethnographic nature, besides primers, Biblical materials and other materials in Indian languages for use in literacy campaigns in Navaho, Comanche, and a number of languages of Mexico.

Pike questions the possibility of separating phonemic and grammatical analyses into two water-tight compartments. He points out that linguists conduct field research along phonological and grammatical lines simultaneously, and that such procedures in turn reflect something of the structure being analyzed. Difference of meaning, and the identification of morphemes, are prerequisites to phonemic analysis. An important part of the paper deals with junctures. The theoretical discussion is followed by an application of certain of the principles to Mixteco.

In the second paper listed, Pike discusses some of the problems encountered in teaching phonemics to students in the classes of the Summer Institute of Linguistics, most of whom are interested in the practical technique of reducing a language to writing. The problem is met (1) by a classroom demonstration with an actual language at the outset of the course, (2) by individual supervised analysis of an American Indian language at the close of the course, and (3) by linking classroom procedure and theory as closely as possible to actual field practice during the course. Procedures for phonemic analysis are linked generally to four basic premises which can be appreciated by the beginning student.

Nida's paper has been previously cited[3] in manuscript by its perhaps more explanatory title of A System for Analytical Description

[1] Aboriginal Linguistics is a journal which was begun in 1947 as an occasional publication by Allan Farson, Editorial Indígena, Cuernavaca, Morelos, Mexico. The first number consists of the two papers here cited. It is the only number issued to date.

[2] There have also appeared lithoprinted editions of two books which were cited in their earlier mimeographed form in this column a year ago (IJAL 14.59–60 [1948]). These are: Phonemics: A Technique for Reducing Languages to Writing, by Kenneth L. Pike (University of Michigan Publications, Linguistics III. Ann Arbor: University of Michigan Press, 1947. Pp. xvi, 254); and Tone Languages: A Technique for Determining the Number and Type of Pitch Contrasts in a Language, with Studies in Tonemic Substitution and Fusion, by Kenneth L. Pike (University of Michigan Publications, Linguistics IV. Ann Arbor: University of Michigan Press, 1948. Pp. xii, 187).

[3] In the Linguistic and Ethnographic Bibliography of Members of the Summer Institute of Linguistics (Glendale, 1947), p. 5.

of Grammatical Constituents. To this reviewer its chief value is that it gives an inventory of various elements in our system of grammatical analysis, an outline which classifies these elements and which may be used as a sort of checklist. The outline is in the nature of a comprehensive statement to be made concerning any given construction as regards its descriptive features; however, such a statement must require a good deal of prior analysis not only of the construction under scrutiny but of the language structure as a whole.

Florence Cowan gives a table of 41 Mazateco kinship terms; these are grouped in five generations plus one group of affinal terms and one group of secondary terms. A morphological study of the terms is given. This is followed by comments on the cultural implications of the various kinships, especially as regards permitted marriage, place of residence, status and marriage of orphans, and polygyny. There is appended a chart of the descending genealogy of a Mazateco family, with an illustrative list of the terms as applied by specific members of the genealogy to certain other members of the genealogy.

Law's article is an ethno-linguistic study dealing with a highly complex set of greeting forms, prescribed in the culture 'on the basis of the sex, age, and mutual relationship of the individuals concerned'. The paper is in three sections. The first section gives the Gulf Aztec (Nahuat) text and literal and free English translations of the three rather lengthy greeting dialogues, viz. those used between two-co-godfathers, between two co-godmothers, and between a co-godfather and co-godmother. Each dialogue is accompanied with a formally prescribed handshake which is briefly described. A list of the morphemes in the dialogues is then given. In the second section a number of shorter greeting-response complexes are given, followed by a morphological classification and analysis. The third section discusses certain of the non-linguistic activities which accompany the greetings.

Elson's text is the story of the Homshuk, or Popoluca god of corn (Although the text itself contains little or no reference to corn). The Sierra Popoluca text is given, with a literal translation in English and a free translation in Spanish. The phonemic transcription follows the analysis in Elson's Sierra Popoluca Syllable Structure (IJAL 13.13–47 [1947]). A series of footnotes provides a limited grammatical and lexical commentary to the text.

The Huave materials consist of four legends written in Huave by Olivares, a native speaker of the language from San Mateo del Mar, Oaxaca, Mexico, and accompanied by free and literal translations made by Warkentin. The phonemic transcription is one made by Warkentin; phonemes are listed in a footnote on the first page of the article.

George Cowan's paper is a brief report of a survey among the Amuzgo Indians of Guerrero and Oaxaca, with sketch maps of the area. Included is a brief section entitled 'El Idioma Amuzgo', intended as a beginning for further studies. (Cloyd Stewart, who accompanied Cowan on the survey, is at present working on Amuzgo in the field.) Cowan's preliminary phonemic analysis is given; four phonemic tone registers are postulated, with a discussion of the frames used in arriving at them.

Margaret Harris discusses 'noun classifiers' (the paper was written in English and the Spanish title is a mistranslation) in Tabascan Chontal, a Mayan language of southern Mexico. The noun classifiers are suffixes that are attached to numerals, usually when they precede nouns; the choice of the classifier is governed by the noun which follows; the suffixes thus serve as markers of

noun classes. Thirteen suffixes are listed; certain of these appear to establish noun classes as stated above, definable roughly in terms of animateness or shape. But certain of the suffixes overlap with other suffixes; two of the suffixes may occur without a following noun. It is therefore probable that not all the suffixes listed are really classifiers. This paper was submitted for publication several years ago, in the early stages of the author's investigations; she is still engaged in work on Chontal in the field.

The paper by Hilton consists of a comparative list of 212 words and phrases in Tarahumara and Guarijio, two closely related languages in the state of Chihuahua, Mexico, with their equivalents in Spanish. The list provides source material for comparison, although the author himself has drawn no conclusions. Any attempted reconstruction is obviously beyond the scope of this abstract; but a superficial examination of the lists suggests the following as being among the correspondences of non-identical phonemes. Word-initial Guarijio t = Tarahumara r in some words, t in others. Word-initial Tarahumara b = Guarijio p in some words, b in others. Word-medial Tarahumara k = Guarijio n in some (few) words, k in others.

The Mazateco article by George and Florence Cowan treats the affixes which mark location and direction, and shows their place in the morphological system. A diagrammatic chart shows the semantic relationships and contrasts of these affixes to each other. A list of Mazateco phonemes is appended; for a more detailed phonemic analysis see E. V. Pike and K. L. Pike, Immediate Constituents of Mazateco Syllables (IJAL 13.78–91 [1947]).

Stark discusses Mixteco sound-sequences which consist of more than one segment and concerning which the phonemicist might be in doubt as to whether they should be interpreted as phonemes or sequences of phonemes. He shows the criteria which are used to unite certain of these into unit phonemes. Certain of the criteria used are perhaps applicable generally; others appear doubtful as to their validity outside the particular context in which they are used.

The Harrison dictionary is part of a literature program for the Zoque Indians, and is designed primarily for the use of native Zoques who desire to learn Spanish and of non-Zoques who desire to learn Zoque; but it is also offered as data material for the use of linguists. It contains some 2,000 Zoque words, alphabetically arranged first in a Spanish-Zoque section, then in a Zoque-Spanish section. The orthography is based on a phonemic transcription but is adapted to Spanish symbols in the same way as in other current publications by Harrison and by Wonderly which are for the use of native Zoques. All forms cited in the dictionary are free forms; since all verb stems in Zoque are bound forms, the linguist who uses the dictionary will have to abstract the verb stems from their inflected forms.

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